DRAFT

Digital Flood Insurance Rate Map (DFIRM)

Graphic Specifications

Federal Emergency Management Agency

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1. INTRODUCTION

To meet its Map Modernization objectives for the conversion of its map inventory to a digital format, the Federal Emergency Management Agency (FEMA) has developed specifications for a new Digital Flood Insurance Rate Map (DFIRM) product. The new DFIRM product uses computer technology for more efficient map updates, production, and distribution. It also provides for cost-efficient, rapid conversion of the mapping inventory to a digital format. The new DFIRM product is prepared for communities with adequate flood data as well as those that require new engineering analyses.

This document is intended for users and producers of DFIRMs. It sets forth the specifications for the graphic elements that are shown on the DFIRMs, including the base map, flood hazard information, legend, and title block. It also addresses issues such as how the DFIRMs are paneled and the specifications for the DFIRM Map Index.

2. DFIRM SCOPING

A scoping phase typically precedes the preparation of a DFIRM. The DFIRM scoping process involves research, data inventory, and community coordination. The following DFIRM Scoping Checklist is used to solicit the information needed to answer these key questions:

What base map will be used for this DFIRM?
Will this be a countywide or community-based DFIRM?
What (if any) DFIRM options will be included in this restudy?

DFIRM Scoping Checklist

Base Map Information

Are U. S. Geological Survey (USGS) Digital Orthophoto Quadrangles (DOQs) available for this community or county?
What community base map data are available? From whom?
What is the source of the base map data (how were the data created)?
Are the owners of the data willing to allow FEMA to release the base map data to the public with the DFIRMs?
If the base map data are in vector format and the owner is not willing to release the data, will the owner allow FEMA to make a raster image of the vector base map data for release?
Is the base map in the process of being updated or revised? If so, what is being done, who is doing it, and when will it be completed?
Are the data available now? If not, what is the projected completion date?
Do the data cover the entire community or county?
What is the accuracy or resolution of each data type?
When were the base map data created, last updated, or reviewed for update needs?
What projection, horizontal datum, and vertical datum were used for the base map data?
In what file format(s) are the data available?
How are the data tiled?
Is a data dictionary or metadata available?
What feature types do the base map data sets contain?

- ☐ Digital orthophotos
  - ☐ Community produced
  - ☐ USGS DOQs
- ☐ Roads
  - ☐ Centerlines
  - ☐ Edge of pavement
  - ☐ Right of way
- ☐ Road names
  - ☐ Stored as attributes in database
  - ☐ Placed as graphic elements for plotting. At what scale(s)?
- ☐ Railroads
- ☐ Railroad names
- ☐ Airports
- ☐ Rivers, streams, lakes, shorelines, coastlines
- ☐ Political boundaries (corporate, county, extraterritorial, etc.). Are boundaries current?
- ☐ Parks, military reservations, Native American lands

- □ Range, township, section lines
- □ Building footprints
- □ Parcels
- □ Bridges
- □ Flood control structures (e.g., culverts, levees, dams, weirs, floodwalls, jetties, etc.)
- □ What bench marks, Elevation Reference Marks (ERMs), or other vertical control data are available for the community, county, or study area?

Topographic Information

What elevation data are available?
What is the source of the topographic data (how were the data created)?
Do the data cover the entire community or county?
Are the data available now? If not, what is the projected completion date?
What is the accuracy or resolution of the topographic data?
When were the topographic data created, last updated, or reviewed for update needs?
What projection, horizontal datum, and vertical datum were used for the topographic data?
In what format(s) are the data available?

- □ Contours
  - What is the contour interval?
- □ Digital Elevation Model (DEM)
  - What is the horizontal resolution?
  - What is the vertical resolution?
- □ Mass points and break lines (Digital Terrain Model [DTM])
- □ Triangulated Irregular Network (TIN)

Flood Hazard Data

What information is available from the Mapping Needs Update Support System (MNUSS) regarding map needs or available data?
What existing effective backup information is available?
Have any Letters of Map Change (LOMCs) been issued that revise the effective FIRMs?
Are there any contiguous community issues?
Are there any deferred map actions that need to be incorporated?
Have corporate limits changed significantly since the effective FIRM was published?
Are digital flood hazard data available? From whom?
What was the source of the digital flood hazard data (how were the data created)?
Were the floodplains modified to fit newer topographic information?
Do any new data tie in to the existing effective information?
Do the data cover the entire community or county being restudied?
Are the data available now? If not, what is the projected completion date?
What is the accuracy or resolution of each data set or type?

When were the data created, last updated, or reviewed for update needs?
Have the digital flood hazard data been compared to the effective FIRMs to ensure that base map to flood hazard relationships have been preserved?
Are LOMCs included in the digital data?
What projection, horizontal datum, and vertical datum were used for the flood hazard data?
In what file format(s) are the data available?
How are the data tiled?
Is a data dictionary or metadata available?
What feature types do the flood hazard data sets contain?

- ☐ 1% annual chance flood hazard areas
- ☐ 0.2% annual chance flood hazard areas
- ☐ Floodways
- ☐ Coastal Barrier Resources System areas
- ☐ Flood hazards on alluvial fans
- ☐ Base flood elevations, depths, or velocities
- ☐ Cross sections
- ☐ ERMs
- ☐ LOMCs
- ☐ Are data for other flood frequencies available?
- ☐ Other (e.g., flood hazard areas based on future conditions, standard project flood, etc.)

Other Hydrologic and Hydraulic Information

Do the flood hazard boundaries need to be fitted to newer or more detailed stream locations and/or topography than was previously used for the existing FIRM?
Are new Hydrologic and Hydraulic (H&H) models available? If so, what are their characteristics? Do they need inclusion?
Were the H&H data developed using automated modeling and mapping techniques? If so, what are their characteristics?
Are digital files containing data needed for hydrologic or hydraulic modeling (e.g., land use or soils) available?
Are supplemental data (e.g., photographs, etc.) available? Are they in digital format?
Are there levees in the community? If so, are they currently shown as providing protection from the 1% annual chance flood event?
Do the levees meet the criteria of the Code of Federal Regulations 44 (CFR 44), Part 65.10, or is U.S. Army Corps of Engineers (USACE) certification available for these levees?
Do the coastal analyses reflect primary frontal dunes? Wave heights? Setup? Runup?
Does the community maintain H&H analyses that reflect future conditions?
Are other hazard data available? If so, describe them.
Are elevation certificates for floodprone structures available in a database or other electronic format?

3. DFIRM MAPPING FORMATS

Based on the results of the DFIRM scoping phase, the DFIRM is processed in one of a number of formats. This section discusses the following DFIRM formats and options:

- Vector base map
- Raster base map (e.g., DOQ)
- Countywide
- Community-based
- DFIRM combined with Flood Insurance Study (FIS) components

3.1. Vector Base Maps

Base map data that are supplied by communities or other non-Federal sources (e.g., State or regional agencies) and meet FEMA's criteria are the first choice for DFIRM production. The graphic specifications for vector-based DFIRMs use only a single color (black), with the Special Flood Hazard Areas (SFHAs) depicted in shades of gray.

3.2. Raster Base Maps

Base map data supplied by the community may be available in the form of digital orthophotos. If they meet FEMA's criteria, community-supplied digital orthophotos are preferred. USGS DOQs are the second choice and the default base map if suitable community data (either vector or raster) are not available. The graphic specifications for DOQ-based DFIRMs include the use of two colors (black and cyan), with the SFHAs distinguished by cyan dots.

3.3. Countywide

DFIRMs are often prepared in a countywide format, whereby all jurisdictions within a given county are shown on one set of maps. Countywide map numbers are comprised of the 5-digit county Federal Information and Processing Standard (FIPS) code followed by a "C," the 4-digit panel number, a space, and the map suffix.

3.3.1. Multi-county Communities

Some communities fall within more than one county, presenting some unique challenges for countywide mapping. When this occurs and one or more of the counties is being processed in countywide format, several options are available. The goal of all of the options is to attain seamless coverage of flood hazard areas across community boundaries and avoid overlapping coverage.

The available options are as follows:

- Retain the community-based FIRM for the multi-county community and show the subject areas as Areas Not Included on the countywide DFIRM.

- Show the multi-county community in its entirety on the countywide DFIRM being processed. This option is restricted to cases where at least 70% of the multi-county community lies within the county being mapped.

- Split the community between two or more countywide format DFIRMs.

The factors to be considered in deciding which option to use are as follows:

- Does the subject community prefer to keep its community-based FIRM?

- In how many counties does the subject community lie?

- How are the multi-county communities shown on the surrounding county FIRMs

- What is the status of the surrounding counties relative to countywide processing?

- Does the subject community have full jurisdiction over its lands?

- How much of the subject community falls within the county that is being processed?

- What is the map scale of the existing community based FIRM?

- How many panels would be added to the countywide DFIRM to include the subject community in its entirety?

The decision on which option to use is made in consultation with a FEMA Project Officer after evaluating the factors outlined above.

3.4. Single Jurisdiction (Community Based)

Single jurisdiction FIRMs were the standard for the first 20 years of the National Flood Insurance Program (NFIP). Maps prepared in this format show all areas within a single given community's jurisdiction on one FIRM. Single jurisdiction DFIRMs are prepared when cost constraints or lack of suitable base map data prohibit full countywide mapping.

Many FIRM updates affect only a portion of a community (i.e., only a few map panels instead of the entire community). When this is the case, a decision must be made about whether to convert the entire FIRM to digital format during the revision or do the revision manually. The decision about whether to convert a community to digital format must be made with the following in mind:

- FEMA's goal is to convert its entire inventory of manual maps to a digital format.
- One of the primary benefits of digital mapping is that it will reduce the cost of future revisions.
- Many of the steps required to convert a study to digital format require nearly as much time for a partial digital study as for a full digital study.

Digital conversion of only the revised panels (partial digital conversion) is not the preferred option, but may be undertaken when cost constraints prohibit full digital conversion.

3.5. DFIRM and FIS Combinations

For small communities that are shown as single jurisdiction DFIRMs, a combination DFIRM and FIS may be created. This involves printing one DFIRM panel containing all identified floodplains for the community as well as a condensed version of the FIS report. The use of this format eliminates the requirement to create and print a separate FIS report. Space limitations guide the decision on using this map format. At a minimum, the Flood Profiles, Floodway Data table, and Summary of Flood Discharges are shown. The DFIRM Notes to User are modified to reference the map instead of the FIS as the source of certain pertinent information. Examples of the notes and how they are modified are shown in Section 8.

The decision to create a combination DFIRM and FIS should be made in consultation with a FEMA Project Officer.

4. BASE MAPS

4.1. Base Map Choice Priorities

Base map data that are supplied by communities or other non-Federal sources (e.g., State or regional agencies) and meet FEMA's criteria are the first choice for DFIRM production. These files may be in either vector or raster format. If both are available, vector data are preferable based on ease of use, file size, and printing cost. However, community preferences are taken into account when making this choice. USGS DOQs are the second choice and the default base map if suitable community data are not available. If neither suitable community base map data nor USGS DOQs are available for a county scheduled for DFIRM production, FEMA provides the community with information on base map sources, including information on partnering with USGS to initiate DOQ production for that county. DOQ production normally takes 12 to 14 months, so coordination with USGS must be initiated with that time frame and the DFIRM production schedule in mind.

DFIRM road and railroad names are derived from community-supplied files or hardcopy sources, current FIRM panels, and/or U.S. Bureau of the Census Topologically Integrated Geographic Encoding and Reference System (TIGER) files. Road names are needed regardless of which base map source is chosen for DFIRM production.

4.2. Community Coordination

Early coordination with all communities scheduled for a DFIRM is an important part of the DFIRM production process. Each community is sent a letter that describes the DFIRM product, requests pertinent information, describes the minimum requirements for the submittal of data to be included in the new DFIRM product, and identifies the default base map source if community data are not available or suitable. Pertinent information that is requested includes base map data; a current corporate limits map; elevation data (either electronic or hardcopy); and any engineering information that needs to be updated or added to the DFIRM. Communities are encouraged to coordinate with other communities within the same county to provide FEMA with an integrated base map for the entire county whenever possible.

4.3. Minimum Standards for Community-Supplied Data

In order for FEMA to use community-supplied base map data instead of USGS DOQs for new DFIRM production, the following minimum standards must be met.

4.3.1. Resolution

The minimum resolution requirement for raster data files is 1 meter ground distance. Higher resolution data are also acceptable.

4.3.2. Horizontal Accuracy

The National Standard for Spatial Data Accuracy (NSSDA) is used to report the horizontal accuracy of the base map data used by FEMA to produce a DFIRM. The NSSDA uses root-mean-square error reported in ground distances at the 95% confidence level. This means that 95% of the positions in the data set will have an error with respect to true ground position that is equal to or smaller than the reported accuracy value. The minimum horizontal positional accuracy for new DFIRM base map data is that of the default base map – the USGS DOQs, which have an NSSDA accuracy of 38 feet. Data that meet higher accuracy standards are also acceptable.

4.3.3. Vertical Accuracy

For hilly terrain, where 4-foot contours are considered acceptable for hydraulic modeling, digital elevation data must have vertical accuracy ($Accuracy_z$) of 2.4 feet, i.e., vertical root mean square error ($RMSE_z$) of 1.2 feet. In moderate to flat terrain, where 2-foot contours are required to accurately compute Base Flood Elevations (BFEs) and SFHA boundaries, the digital elevation data must have $Accuracy_z$ of 1.2 feet, i.e., $RMSE_z$ of 0.6 foot. According to the NSSDA, which has replaced the National Map Accuracy Standards (NMAS) of 1947 for digital mapping products, $Accuracy_z$ defines vertical accuracy at the 95% confidence level, meaning that the true or theoretical location of a point falls within ± of that linear uncertainty value 95% of the time. $Accuracy_z = RMSE_z \times 1.9600$, where $RMSE_z$ is the square root of the mean of the squared errors in elevations of check points used to evaluate the vertical accuracy of a digital dataset.

4.3.4. Horizontal Reference System

The files must be georeferenced to a known projection and datum and be accompanied by information that describes those parameters.

4.3.5. Data Sources

Community-supplied data may be in the form of digital orthophotos or vector data files. Locally produced digital orthophotos may be at larger scales and higher resolution than USGS DOQs, but must meet USGS DOQ standards at a minimum. Aerial images that are not ortho-rectified are not acceptable. Vector files may be photogrammetrically compiled or

digitized from orthophotos. Unacceptable vector file sources include TIGER files or other files compiled at scales smaller than 1:20,000.

4.3.6. Currency

The data must have been created or reviewed for update needs within the last 7 years.

4.3.7. Coverage

FEMA desires to receive complete and integrated data for an entire county. If only portions of a county are available, FEMA may choose to use the default base map source (USGS DOQs) for the county.

4.3.8. Availability

The data must be available at the time of the initial coordination contact and must be sent within 30 days of receipt of FEMA's request.

4.3.9. Restrictions on Use

FEMA must be able to print and distribute an unlimited number of hardcopy maps using the data. FEMA must also be able to freely distribute the base map data, along with the floodplain information, to the public. Conversion of vector base map data to a raster format for distribution is an option if this satisfies community concerns over release of proprietary data.

4.3.10. Required Contents

The files must contain all transportation features (roads, railroads, and airports) for the community. If digital orthophotos are supplied, these features must be clearly visible. If vector files are supplied they must also contain transportation features. Roads are considered to be those travel ways intended and maintained for use by motorized vehicles. In vector format, roads may be portrayed as road centerlines or edges of pavement.

FEMA also desires to augment the USGS DOQs or community supplied transportation features with the following vector data:

- Hydrographic features, including streams, rivers, lakes, and shorelines;
- Current political boundaries, including those that define the county, corporate limits, extraterritorial jurisdictional areas, military lands, and Native American lands;
- Parks or forest lands, if applicable;
- Range, township, and section lines, if applicable; and

- Feature names for all of the above features that have names. These may be provided as annotation/text features or as attributes.

4.3.11. Optional Contents

FEMA also desires the following features, if available:

- Bridges;
- Unimproved roads or trails. (i.e., those travel ways not intended for motorized vehicles or not usually used by motorized vehicles due to width or seasonal conditions);
- Flood control structures, including levees, dams, weirs, floodwalls, jetties, etc.;
- Elevation data in the form of contours and spot elevations, DEM or DTM data, a Triangulated Irregular Network (TIN), or mass points and break lines. If mass points and break lines are available, FEMA desires both those data and the resulting data that are derived from them;
- Building footprints; and
- Parcel outlines or parcel centroids.

4.3.12. Thematic Separation of Data

Thematic data must be separated by level, layer, attribute, or file.

4.3.13. File Format

4.3.13.1. Raster Data

Digital Orthophoto files may be submitted in Tagged Image File Format (.TIF), Georeferenced TIF (GeoTIF), Band Interleaved by Pixel (.BIP or .BIL), or Joint Photographic Experts Group (JPEG) format. Raster files must be accompanied by a file that provides coordinate information that will allow the images to be georeferenced (e.g., a tfw file).

4.3.13.2. Vector Data

Vector data may be submitted in the following file formats:

- ARC/INFO export file – E00
- ArcView shape file – SHP
- MicroStation design file – DGN
- MapInfo interchange format – MIF
- MapInfo native table format – TAB
- AutoCAD drawing file – DWG

- Drawing exchange format – DXF
- Digital Line Graph – DLG
- Spatial Data Transfer Standard – SDTS

4.3.14. Transfer Media

The files must be submitted on one of the following electronic media.

- CD-ROM *
- Zip disk
- 8mm tape
- 3 ½" diskette
- Electronic transfer to File Transfer Protocol (FTP) site
- Electronic transfer by E-mail (for files under 2 MB)

* Preferred medium

4.3.15. Tiling

FEMA desires data in one single file or a series of thematic files that cover the entire geographic area of the community instead of individual small tiles that cover limited geographic areas.

4.3.16. Data Structure

Vector data files must meet the following data structure requirements.

- Line features must be continuous (no dashes, dots, patterns, or hatching).
- Files must not contain curves, B-splines, or arcs.
- Files must not contain nested cells.
- CADD files (e.g., MicroStation DGN files or AutoCAD DWG files) must not contain annotation generated from a database; the annotation must be placed as text. GIS files (e.g., ArcInfo coverages or ArcView Shape files may contain annotation and/or database attributes.
- There should be no gaps or overshoots between features that should close.

4.3.17. Metadata

The files must be accompanied by metadata that comply with the Federal Geographic Data Committee (FGDC) metadata standards or by a FEMA Digital Base Map Information Checklist that describes the files and their contents.

4.4. Combining Data from Multiple Sources

FEMA desires to receive complete and integrated data for an entire county. If only portions of a county are available, FEMA may choose to use the default base map source (USGS DOQs) for the county. FEMA may also choose to combine data from multiple base map sources to prepare the new DFIRM product. This may entail piecing together data provided by adjoining communities or adjoining DOQs.

Once a base map has been accepted, FEMA uses the locations of features in the base map data files as-is. To facilitate fitting data together from multiple sources, base map features from one source may be clipped where they meet those from another source. Small graphical mismatches between communities where roads or other features cross community boundaries are resolved. This allows creation of seamless digital data files.

4.5. Acknowledgment of Data Sources

An acknowledgment note that defines the source(s) of the digital base map data is placed in the Notes to Users section of the DFIRM.

4.6. Base Map Features

As discussed above, the following base map features are depicted on the DFIRM if they occur within the community:

- Transportation features, including roads, railroads, and airports. If digital orthophotos are supplied, these features must be clearly visible. Roads are considered to be those travel ways intended and maintained for use by motorized vehicles. Bridges that are included in the hydraulic models should also be included. Unimproved roads or trails (i.e., those travel ways not intended for motorized vehicles or not usually used by motorized vehicles due to width or seasonal conditions) may be included, particularly if they cross the floodplains.
- Hydrographic features, including streams, rivers, lakes, and shorelines.
- Significant land forms, including islands, points, capes, canyons, and gulches.
- Current political boundaries that define the country, state, county, corporate limits, or extraterritorial jurisdictional areas, as applicable.
- Other boundaries, including those that define military lands, Native American lands, parks, forests, State gamelands, wildlife refuges, etc.
- U.S. Public Land Survey System (range, township, and section) lines and designators.
- Flood control structures, including levees, dams, weirs, floodwalls, jetties, etc.
- Significant landmark features.
- Feature names for all of the features listed above, as appropriate.

4.7. Portrayal of Base Map Features

Whenever possible, DOQ images are used as they are received from USGS or the community. The entire DFIRM panel is covered with DOQ imagery, even if some of the image falls outside the jurisdiction being studied. The image is not cropped at the jurisdiction's boundary. However, no imagery is shown outside the DFIRM panel neatline. On DFIRM panels that are only partially covered by the studied jurisdiction, a note is added in areas outside the jurisdiction to clarify that flood hazards may exist outside the jurisdictional boundary. The note is shown in Section 5.7.13.

Variations in tones between DOQ images are acceptable. If more than one DOQ image is included on a DFIRM panel, lightening or darkening of individual images to balance tones is not necessary. Overall lightening of all DOQ images for a study using a single factor may be done so that flood hazard features can be clearly seen.

Updates to roads or other features that have occurred since the DOQs were flown are portrayed as vectors on top of the DOQs. A note may also be added to the map to clarify significant additions as necessary.

In vector format, roads are portrayed either as road centerlines or edges of pavement. Roadway right-of-ways or buffered road centerlines are not desirable because they do not depict a feature that can be physically located by users, who rely on the base map features for general orientation. Users often measure distances from road features in order to locate structures for insurance rating purposes. Road centerlines or edges of pavement are more suitable for this type of use.

Vectors that depict studied streams are shown on top of the DOQs to clarify their locations. The stream vectors are not shown outside of the SFHAs unless removing them would entail additional work.

4.8. Horizontal Reference Grids

Horizontal reference grids and/or grid ticks are shown on the DFIRM to assist map readers in orienting themselves to real world coordinates. The latitude and longitude in degrees, minutes, and seconds are referenced at each of the four corners of the map. The DFIRM also contains a primary horizontal reference grid and secondary horizontal reference grid ticks. A Universal Transverse Mercator (UTM) reference grid (or grid ticks) is always included on the DFIRM. Other reference grids (e.g., State Plane or range, township, and section lines) may also be included.

4.8.1. Primary Horizontal Reference Grid

If the DFIRM is of an area of the country where the Public Land Survey System (PLSS) is used, the primary grid shown on the map is that of the range, township, and section lines. The range and township numbers are labeled along the lines, and the section numbers are labeled in or near the center of each grid square shown on the map panel.

If the DFIRM is of an area of the country where the PLSS is not used, the primary horizontal reference grid is the same as the coordinate system of the digital data. In other words, if the digital files are referenced to the UTM coordinate system, a UTM grid is shown on the map. If the digital files are referenced to the State Plane coordinate system, a State Plane grid of Northings and Eastings is shown on the map.

4.8.2. Secondary Horizontal Reference Ticks

If the DFIRM is of an area of the country where the PLSS is used, the secondary grid ticks are the same as the coordinate system of the digital data. If the digital files are referenced to the UTM coordinate system, UTM grid ticks are shown as cross hairs within the body of the map and ticks along the edge. State Plane grid ticks may also be shown on the map, but are not required. If shown, they are included only along the edges of the panel. If the digital files are referenced to the State Plane coordinate system, both UTM and State Plane grid ticks are required.

If the DFIRM is of an area of the country where the PLSS is not used, the secondary grid ticks are shown as cross hairs within the body of the map and ticks along the edge. If the primary grid is UTM, the secondary grid ticks are State Plane. If the primary grid is State Plane, the secondary grid ticks are UTM.

4.8.3. Grid Interval

The grid interval shown on the DFIRM does not vary between panels within the same study even if the panels are shown at different scales. Generally, a UTM grid interval of 1,000 meters and a State Plane grid interval of 5,000 feet is used.

4.9. Base Map Feature Labeling

DFIRM feature names are derived from community-supplied files or hardcopy sources, current FIRM panels, U.S. Bureau of the Census TIGER files, and/or other sources. All feature names that are available in digital format are shown on the DFIRM. All feature labels on DOQ-based DFIRMs are shown as black text with a white halo around the letters. This enables the names to be clearly read,

whether the background image is light or dark. Feature labels on vector-based DFIRMs are shown as black text.

4.9.1. Road names

All primary roads must be labeled.

All roads located inside or within one inch of SFHAs must be labeled, and any road shown and labeled on a Flood Profile must be labeled on the map.

When space permits, secondary and tertiary roads farther than one inch from SFHAs are labeled. If a community supplies digital road labels beyond the stated minimums, these labels are shown on the DFIRM, provided they meet the text placement standards and do not render the map unusable due to excessive clutter.

Road name labels are not spread out such that there is more than one-half inch between each word in the road name. Additional road name labels may be added for roads that traverse entire DFIRM panels, or as necessary for clarity.

4.9.2. Hydrographic Features (Streams, Lakes, Ponds, Bays, Oceans, Etc.)

All hydrographic features that have an identified flood hazard associated with them must be labeled.

Stream name labels are not spread out such that there is more than one-half inch between each word in the stream name. Additional stream name labels may be added for streams that traverse entire DFIRM panels, or as necessary for clarity.

Large hydrographic features, such as oceans and lakes, may be labeled in larger type fonts or more than once on individual DFIRM panels as necessary for clarity.

4.9.3. Hydraulic Structures (Dams, Culverts, Weirs, Levees, Etc.)

All hydraulic structures in or near identified floodplains (detailed or approximate) must be labeled. The labels are placed near the structure and leadered in as appropriate. If no official name for the structure is available, the appropriate feature symbol and a label identifying the structure type (e.g., Culvert) are added.

4.9.4. Range, Township, and Section Lines and Numbers

PLSS or range, township, and section lines are shown on the DFIRM if they are available in digital format. Mix and match situations where only some DFIRM panels in a given jurisdiction contain section information are avoided. If a countywide DFIRM is being prepared that does not include township, range, and section information on the selected base map, but some of the community-based FIRMs within the county showed this information previously, a concerted effort is made to ensure that this information is obtained and shown on the DFIRM.

Section numbers are placed in the center of the section (or portion of the section shown on the panel) and perpendicular to the neatline of the panel.

Township lines are labeled at the left and right edges of the panel along both sides of the line.

Range lines are labeled at the top and bottom edges of the panel along both sides of the line.

4.9.5. Political Boundaries

All political boundaries are labeled with the appropriate jurisdiction name on each side of the boundary.

If there is not enough space along the political boundary for a label because the jurisdiction area on the panel is small, the boundary itself is not labeled, but the jurisdiction area is always labeled.

If a multi-county community is shown in its entirety on a countywide DFIRM, the county boundary that divides the community is labeled with the county names on each side. If the county labels do not fit inside the area of the multi-county community, these labels are placed outside the community as close as possible to the community and leadered to the boundary.

The corporate limits of a community that lies in more than one county on a countywide DFIRM is labeled with the jurisdiction name on each side of the boundary. The corporate boundary outside the subject county is labeled with the community label on the community side of the boundary and the other county in which that community falls on the other side of the boundary.

Extraterritorial Jurisdictional (ETJ) boundaries are labeled on the ETJ side of the boundary with "*Community Name* Extraterritorial Jurisdiction Limits." If there are space constraints, the label may be shortened to "*Community Name* ETJ Limits."

The ETJ area is labeled with the community name, followed by the words "(Extraterritorial Jurisdiction)," and the Community Identification (CID) number of the community exercising its extraterritorial jurisdiction authority.

4.9.6. Jurisdiction Names and CID Labels

Jurisdiction names and CIDs are placed near the center of the jurisdiction, if possible. For incorporated communities, the title of the community is followed by the name of the community (e.g., City of Smithville), and the CID is placed immediately under the community name. For unincorporated county areas, the county name is followed by "Unincorporated Areas," and the CID is placed immediately under that label.

4.9.7. Other Areas Including Military Lands, Native American Lands, Parks, Forests, State Gamelands, Wildlife Refuges, Etc.

All areas within the boundaries of the area are labeled with the actual name at least once. If the area is large, additional labels are added as needed.

If the label does not fit inside the area, the label is placed close by and leadered into the area.

The boundary of the park or other cultural feature is labeled "PARK BOUNDARY" (or whatever the boundary actually represents) along the outside side of the boundary.

If there is not enough space along the boundary, the boundary label may be left off, but the area must always be labeled.

4.10. Standard Map Notes for Base Map

The following notes are added to the DFIRM as needed to clarify base map areas or features.

4.10.1. (AREA NOT INCLUDED)

This note is used on the DFIRM and Map Index to indicate areas that are excluded from the FIS because they are portions of separate jurisdictions.

4.10.2. CORPORATE LIMITS
COINCIDENT WITH SHORELINE

COUNTY BOUNDARY
COINCIDENT WITH SHORELINE

These notes are used when the corporate limits of a community or county boundary are coincident with a coastal shoreline. In this case, only the shoreline is shown; the corporate limits or county boundary is not shown.

4.10.3. PARK, FOREST, RESERVE, etc., BOUNDARY

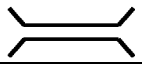
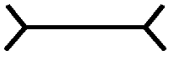
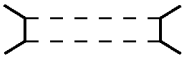
This note is used to label the boundary of a National- or State-designated land use area.

4.11. Graphic Representation of Base Map Features

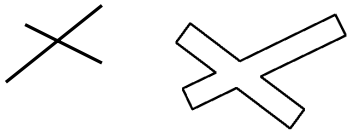
The following section provides examples of various base map features and their graphic portrayal on DFIRMs. Please note that there are two sets of examples, one for DFIRMs that are DOQ-based and one for those that are vector-based. In general, bold type fonts surrounded by a white halo should be used on DOQ-based DFIRMs. Medium type fonts should be used on vector-based DFIRMs where the background allows them to show more clearly.

Note: All base map features are shown on the DFIRM in black unless otherwise noted.

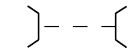
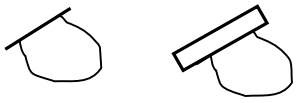
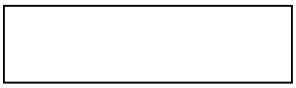
Base Map Features Shown on DOQ Base

FEATURE	SPECIFICATION	EXAMPLE
TRANSPORTATION FEATURES		
Primary Road	Lineweight .020”	
Secondary Road	Lineweight .017”	
Unimproved Road	Lineweight .010” Dash .05”, space .010”	
Street, Road, Avenue Name	8 Pt. Univers Bold CAPS 8 Pt. Arial Bold CAPS	CAPITAL STREET
Private Road, Unimproved Road, Unnamed Road Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Private Road* *Unnamed Road*
Interstate Highway Symbol	Standard Interstate Route Shield Lineweight .010” Size .200” x .200” to .400” x .480” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
U.S. Highway Symbol	Standard U.S. Route Route Shield Lineweight .010” Size .200” x .200” to .400” x .480” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
State Highway Symbol	Circle Lineweight .010” Diameter .200” to .280” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
County Highway Symbol	Rectangle Lineweight .010” Size .150” x .250” to .300” x .400” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
Road or Railroad Bridge	Lineweight .010” Wing tick length .025”, angle 45°	
Bridge Name	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*CORNISH BRIDGE*
Footbridge	Lineweight .010” Wing tick length .025”, angle 45°	
Footbridge Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Footbridge*
Road or Railroad Tunnel	Lineweight .010” Dash .050”, space .010” Wing tick length .025”, angle 45°	 *Tunnel*
Railroad	Lineweight .010” Tie length .060”, spacing .300” - .500”	

Base Map Features Shown on DOQ Base

FEATURE	SPECIFICATION	EXAMPLE
Railroad Name or Label	8 Pt. Univers Medium Italics CAPS 8 Pt. Arial Italics CAPS	*CHESSIE SYSTEM* *RAILROAD*
Abandoned Railroad	Lineweight .010” Tie length .060”, spacing .300” - .500” Dash .300”, space .020”	
Dismantled Railroad, Old Railroad Grade	Lineweight .010” Dash .100”, space .020”	
Abandoned Railroad, Dismantled Railroad, Old Railroad Grade Labels	8 Pt. Univers Medium Italics CAPS or CLC 8 Pt. Arial Italics CAPS or CLC	*ABANDONED RAILROAD* *OLD RAILROAD GRADE* Abandoned Railroad *Old Railroad Grade* *Dismantled Railroad*
Airport	Lineweight .017”	
Airport, Airfield Name	8 – 10 Pt. Universe Medium CAPS 8 – 10 Pt. Arial CAPS	HAGERSTOWN AIRPORT
Landing Strip, Airfield Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Landing Strip* *Airfield*
HYDROGRAPHIC FEATURES		
River, Stream, or Other Hydrographic Feature	Lineweight .010”	
Name of River, Stream, or Other Hydrographic Feature	6 – 24 Pt. Century Bold Italics CAPS or CLC 7 – 24 Pt. Times New Roman Bold Italics CAPS or CLC	***Eighteen Mile Creek*** ***UTAH LAKE***
Unnamed Stream, Unnamed Tributary Label	6 – 11 Pt. Century Bold Italics CAPS or CLC 7 – 11 Pt. Times New Roman Bold Italics CAPS or CLC	***Unnamed Tributary*** ***Tributary No. 1***
Wash, Glacier	Lineweight .010” Dash .050”, space .010”	
Name of Wash, Glacier	6 – 11 Pt. Century Bold Italics CAPS or CLC 7 – 11 Pt. Times New Roman Bold Italics CAPS or CLC	***Century Wash***
Unnamed Hydrographic Feature	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Canal Ditch Pond* *Wash Glacier Swamp Marsh* *Cranberry Bog*
LAND FORMS		
Name of Large Island	14 – 24 Pt. Univers Medium CAPS 14 – 24 Pt. Arial CAPS	SHIP ISLAND
Name of Small Island	8 – 11 Pt. Univers Medium CAPS or CLC 8 – 11 Pt. Arial CAPS or CLC	Green Island

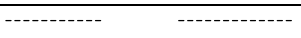
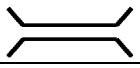
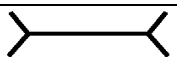
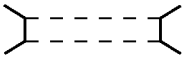
Base Map Features Shown on DOQ Base

FEATURE	SPECIFICATION	EXAMPLE
Name of Point, Cape, Neck	8 – 24 Pt. Univers Medium CAPS or CLC 8 – 24 Pt. Arial CAPS or CLC	Cape Cod
Name of Gulch, Canyon, Draw	8 – 10 Pt. Univers Medium CAPS or CLC 8 – 10 Pt. Arial CAPS or CLC	Lost Canyon
FLOOD CONTROL STRUCTURES		
Culvert, Flume, Penstock, Aqueduct	Lineweight .008” Dash .050”, space .010” Wing tick length .025”, angle 45°	
Culvert, Flume, Penstock, Aqueduct Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Culvert Flume Penstock Aqueduct*
Levee	Lineweight .010” Length .060”, space .010”	
Name of Levee or Levee Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Levee*
Dam or Weir	Lineweight .017”	
Name of Dam or Dam Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Assabet River Dam Dam*
Pier, Dock, Jetty, Sea Wall, etc.	Lineweight .010”	
Pier, Dock, Jetty, Sea Wall, etc., Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Pier Sea Wall Dock Diversion Structure Flood Control Structure*
Descriptive Feature Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Gravel Pit Cemetery Park Tunnel*
LANDMARK FEATURES		
Significant Outlined Landmark	Lineweight .010”	
Name of Landmark Cemetery	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	HAMILTON CEMETERY
Name of Landmark Building	8 Pt. Univers Medium Italics CAPS 8 Pt. Arial Italics CAPS	*BENTON COLLEGE*
BOUNDARIES		
International, State, County Boundary	Lineweight .030” Dashing: 1.500” .050” .150” .050” .150” .050” 1.500”	
Corporate, Extraterritorial Boundary	Lineweight .030” Dashing: 1.500” .050” .150” .050” 1.500”	
Boundary Label	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	CITY OF SEAFORD SUSSEX COUNTY

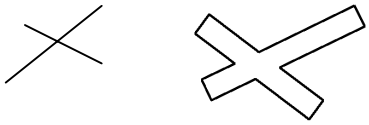
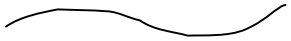
Base Map Features Shown on DOQ Base

FEATURE	SPECIFICATION	EXAMPLE
Community Area Label & Community Identification Number	8 – 24 Pt. Times Roman Bold CAPS or CLC 8 – 24 Pt. Times New Roman Bold CAPS or CLC	**City of Blades** **100031**
Area Not Included Boundary	Lineweight .018”	
Name of Area Not Included	8 – 24 Pt. Times Roman CAPS or CLC 8 – 24 Pt. Times New Roman CAPS or CLC	City of Lafayette
Area Not Included (Note)	8 – 11 Pt. Univers Medium CAPS 8 – 11 Pt. Arial CAPS	(AREA NOT INCLUDED)
Forest, Park, Reservation Boundary	Lineweight .015” Dot diameter .030”, spacing .400”	
Name of Forest, Park, Reservation	11– 24 Pt. Times Roman CAPS or CLC 11 – 24 Pt. Times New Roman CAPS or CLC	US Military Reservation ROOSEVELT STATE FOREST
HORIZONTAL REFERENCE GRIDS		
Range, Township, Section Line	Lineweight .008”	
Range, Township Number	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	R. 43 W. T. 22 N.
Section Number	8, 10, 14, 18, 24 Pt. Univers Medium 8, 10, 14, 18, 24 Pt. Arial	15 15 15 15 15
Horizontal Reference Grid or Grid Ticks	Lineweight .008”	
Horizontal Reference Grid Coordinates (UTM)	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	4276 000 M
Horizontal Reference Grid Coordinates (State Plane)	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	365,000 FT
Corner Coordinates (Latitude, Longitude)	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	80° 16’ 52.5”

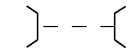
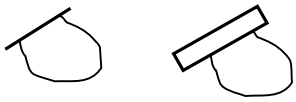
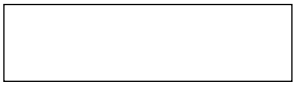
Base Map Features Shown on Vector Base

FEATURE	SPECIFICATION	EXAMPLE
TRANSPORTATION FEATURES		
Primary Road	Lineweight .015”	
Secondary Road	Lineweight .010”	
Unimproved Road	Lineweight .008” Dash .050”, space .010”	
Street, Road, Avenue Name	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	CAPITAL STREET
Private Road, Unimproved Road, Unnamed Road Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Private Road* *Unnamed Road*
Interstate Highway Symbol	Standard Interstate Route Shield Lineweight .008” Size .200” x .200” to .400” x .480” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
U.S. Highway Symbol	Standard U.S. Route Route Shield Lineweight .008” Size .200” x .200” to .400” x .480” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
State Highway Symbol	Circle Lineweight .008” Diameter .200” to .280” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
County Highway Symbol	Rectangle Lineweight .008” Size .150” x .250” to .300” x .400” 6 – 8 Pt. Univers Bold Condensed CAPS 6 – 8 Pt. Arial Bold Narrow CAPS	
Road or Railroad Bridge	Lineweight .008” Wing tick length .025”, angle 45°	
Bridge Name	8 Pt. Univers Medium Italics CAPS or CLC 8 Pt. Arial Italics CAPS or CLC	*CORNISH BRIDGE*
Footbridge	Lineweight .008” Wing tick length .025”, angle 45°	
Footbridge Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Footbridge*
Road or Railroad Tunnel	Lineweight .006” to .010” Dash .050”, space .010” Wing tick length .025”, angle 45°	 *Tunnel*
Railroad	Lineweight .006” to .010” Tie length .060”, spacing .300” - .500”	

Base Map Features Shown on Vector Base

FEATURE	SPECIFICATION	EXAMPLE
Railroad Name or Label	8 Pt. Univers Medium Italics CAPS 8 Pt. Arial Italics CAPS	*CHESSIE SYSTEM* *RAILROAD*
Abandoned Railroad	Lineweight .006" to .010" Tie length .060", spacing .30" - .500" Dash .300", space .020"	
Dismantled Railroad, Old Railroad Grade	Lineweight .006" to .010" Dash .1", space .020"	
Abandoned Railroad, Dismantled Railroad, Old Railroad Grade Labels	8 Pt. Univers Medium Italics CAPS or CLC 8 Pt. Arial Italics CAPS or CLC	*ABANDONED RAILROAD* *OLD RAILROAD GRADE* Abandoned Railroad *Old Railroad Grade* *Dismantled Railroad*
Airport	Lineweight .010"	
Airport, Airfield Name	8 – 10 Pt. Univers Medium CAPS 8 – 10 Pt. Arial CAPS	HAGERSTOWN AIRPORT
Landing Strip, Airfield Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Landing Strip* *Airfield*
HYDROGRAPHIC FEATURES		
River, Stream, or Other Hydrographic Feature	Lineweight .008"	
Name of River, Stream, or Other Hydrographic Feature	6 – 24 Pt. Century Bold Italics CAPS or CLC 7 – 24 Pt. Times New Roman Bold Italics CAPS or CLC	***Eighteen Mile Creek*** ***UTAH LAKE***
Unnamed Stream, Unnamed Tributary Label	6 – 11 Pt. Century Bold Italics CAPS or CLC 7 – 11 Pt. Times New Roman Bold Italics CAPS or CLC	***Unnamed Tributary*** ***Tributary No. 1***
Wash, Glacier	Lineweight .008" Dash .050", space .010"	
Name of Wash, Glacier	6 – 11 Pt. Century Bold Italics CAPS or CLC 7 – 11 Pt. Times New Roman Bold Italics CAPS or CLC	***Century Wash***
Unnamed Hydrographic Feature	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Canal Ditch Pond* *Wash Glacier Swamp Marsh* *Cranberry Bog*
LAND FORMS		
Name of Large Island	14 – 24 Pt. Univers Medium CAPS 14 – 24 Pt. Arial CAPS	SHIP ISLAND
Name of Small Island	8 – 11 Pt. Univers Medium CAPS or CLC 8 – 11 Pt. Arial CAPS or CLC	Green Island

Base Map Features Shown on Vector Base

FEATURE	SPECIFICATION	EXAMPLE
Name of Point, Cape, Neck	8 – 24 Pt. Univers Medium CAPS or CLC 8 – 24 Pt. Arial CAPS or CLC	Cape Cod
Name of Gulch, Canyon, Draw	8 – 10 Pt. Univers Medium CAPS or CLC 8 – 10 Pt. Arial CAPS or CLC	Lost Canyon
FLOOD CONTROL STRUCTURES		
Culvert, Flume, Penstock, Aqueduct	Lineweight .006 to .008” Dash .050”, space .010” Wing tick length .025”, angle 45°	
Culvert, Flume, Penstock, Aqueduct Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Culvert Flume Penstock Aqueduct*
Levee	Lineweight .010” Length .060”, space .010”	
Name of Levee or Levee Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Levee*
Dam or Weir	Lineweight .010”	
Name of Dam or Dam Label	8 Pt. Univers Medium Italics CAPS or CLC 8 Pt. Arial CAPS or CLC	*ASSABET RIVER DAM Dam*
Pier, Dock, Jetty, Sea Wall, etc.	Lineweight .008” to .010”	
Pier, Dock, Jetty, Sea Wall, etc., Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Pier Sea Wall Dock Diversion Structure Flood Control Structure*
Descriptive Feature Label	8 Pt. Univers Medium Italics CLC 8 Pt. Arial Italics CLC	*Gravel Pit Cemetery Park Tunnel*
LANDMARK FEATURES		
Significant Outlined Landmark	Lineweight .008”	
Name of Landmark Cemetery	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	HAMILTON CEMETERY
Name of Landmark Building	8 Pt. Univers Medium Italics CAPS 8 Pt. Arial Italics CAPS	*BENTON COLLEGE*
BOUNDARIES		
International, State, County Boundary	Lineweight .020” to .030” Dashing: 1.500” .050” .150” .050” .150” .050” 1.500”	
Corporate, Extraterritorial Boundary	Lineweight .020” to .030” Dashing: 1.500” .050” .150” .050” 1.500”	

Base Map Features Shown on Vector Base

FEATURE	SPECIFICATION	EXAMPLE
Boundary Label	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	CITY OF SEAFORD SUSSEX COUNTY
Community Area Label & Community Identification Number	8 – 24 Pt. Times Roman Bold CAPS or CLC 8 – 24 Pt. Times New Roman Bold CAPS or CLC	**City of Blades** **100031**
Area Not Included Boundary	Lineweight .020”	
Name of Area Not Included	8 – 24 Pt. Times Roman CAPS or CLC 8 – 24 Pt. Times New Roman CAPS or CLC	City of Lafayette
Area Not Included (Note)	8 – 11 Pt. Univers Medium CAPS 8 – 11 Pt. Arial CAPS	(AREA NOT INCLUDED)
Forest, Park, Reservation Boundary	Lineweight .015” Dot diameter .030”, spacing .400”	
Name of Forest, Park, Reservation	11 – 24 Pt. Times Roman CAPS or CLC 11 – 24 Pt. Times New Roman CAPS or CLC	US Military Reservation ROOSEVELT STATE FOREST
HORIZONTAL REFERENCE GRIDS		
Range, Township, Section Line	Lineweight .004” to .006”	
Range, Township Number	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	R. 43 W. T. 22 N.
Section Number	8, 10, 14, 18, 24 Pt. Univers Medium 8, 10, 14, 18, 24 Pt. Arial	15 15 15 15 15
Horizontal Reference Grid or Grid Ticks	Lineweight .006”	
Horizontal Reference Grid Coordinates (UTM)	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	4276 000 M
Horizontal Reference Grid Coordinates (State Plane)	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	365,000 FT
Corner Coordinates (Latitude, Longitude)	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	80° 16’ 52.5”

5. FLOOD HAZARD FEATURES

5.1. Floodplains and Floodways

The 1% annual chance and 0.2% annual chance floodplain boundaries are shown by solid lines. Boundaries between different flood hazard zones are shown as solid black or blue lines, as appropriate to the type of base map. Boundaries dividing flood hazard areas of different static elevations, flood depths, or velocities are shown as white lines. The boundaries of Zone D areas are shown by dashed lines unless they abut the 1% annual chance floodplain, in which case the 1% annual chance floodplain boundary takes precedence.

Floodways are shown by a dashed line with a hatching pattern within the floodway itself. The floodway widths shown at cross-section locations must agree with the values shown on the Floodway Data table in the FIS report within a maximum tolerance of five percent of the map scale or five percent of the distance, whichever is greater.

The use of GIS and automated mapping techniques for the delineation of floodplain and floodway boundaries allows very small areas of flooding to be shown in the digital files. Some judgment must be exercised in selecting which of these areas to show on the DFIRM. Extremely small areas may be eliminated in some cases. However, in general, all 0.2% annual chance floodplain areas that are adjacent to 1% annual chance floodplain areas, no matter how thin, are retained in the digital files.

5.1.1. Future Conditions

At the request of a community, DFIRMs may reflect future conditions hydrology and show, for informational purposes, future conditions flood hazard areas. If included, the future conditions flood hazard areas replace the 0.2% annual chance flood hazard areas and are referenced in the DFIRM legend and the title block. See Section 6.1.10. for an example of the future conditions note shown in the title block. See Section 7.1.1. for the future conditions addition to the DFIRM legend.

5.1.2. Zone labels

All zone areas are labeled at least once with their appropriate flood zone and static elevation or depth, if appropriate.

Very thin areas of 0.2% annual chance floodplain that border 1% annual chance floodplain areas are labeled, where possible, as the areas widen enough to be seen at the printed map scale.

Floodway fringe areas are not considered separate areas requiring labels. One zone label is sufficient for both the floodway and the floodway fringe(s).

When it is necessary to leader a label to isolated Zone X areas (shaded and unshaded), one label with 2 or more leaders may be used.

Zone labels are repeated as necessary for clarity in large or complicated areas.

5.1.3. Adjusting Unrevised Floodplains to Updated Streams

Where unrevised floodplains are superimposed onto updated hydrographic information, there are often situations where the floodplain boundaries need to be adjusted to fit the updated information. The following criteria are used to guide this process:

5.1.3.1. Streams Studied by Approximate Method

For streams that were studied by approximate the old floodplain boundaries are adjusted to fit the new stream location. The method for this adjustment is a visual inspection and manual adjustment to fit the entire floodplain to the new stream. The intent of this adjustment is to ensure that the reconfigured floodplain looks reasonable relative to the new stream, and that the overall reconfigured floodplain width at any given point does not vary from the old floodplain width by more than 10%. The ideal floodplain reconfiguration results in the maintenance of the stream/floodplain relationships and floodplain/road relationships shown on the previously printed FIRM. In extreme cases where old and new streams are significantly different, the floodplain is reconfigured to ensure, at a minimum, that the new stream is contained within the reconfigured floodplain. In cases where road/floodplain relationships cannot be maintained, an exception to the 10% rule stated above is made and the floodplain is widened or narrowed as needed.

5.1.3.2. Streams Studied by Detailed Methods

For streams studied by detailed methods, where a floodway and/or BFEs are present, the relationship between hydraulic structures (bridges, culverts, etc.) that were considered in the hydraulic model, as well as the relationship between the stream and floodway boundaries, is maintained. In addition, the floodplain is adjusted to minimize differences in floodway widths at mapped cross sections. The following general guidelines are used to fit unrevised floodplains to DOQ or updated stream configurations.

5.1.3.2.1. Hydraulic Structures

Where modeled hydraulic structures (i.e., appearing on the flood profiles) cross streams studied by detailed methods, the unrevised floodplain configuration is adjusted so that the subject structure falls at or near (within 25 feet) of the crossing as indicated in the hydraulic model. Because the mapped floodway configurations, cross sections, and BFEs have a direct relationship to hydraulic structures, these relationships are maintained as closely as possible. This often results in map distances that are longer or shorter than the total channel distance in the model. It should be noted that if there is evidence that the structure in question was physically moved subsequent to the previously printed FIRM, maintaining these BFE and cross section relationships is not critical.

5.1.3.2.2. Floodway and Floodplain Boundaries

In cases where the stream has moved significantly, causing the unrevised floodplain configuration not to fit the new stream, the floodplain is adjusted to fit the new stream. Of particular importance is ensuring that the floodway configuration relative to the new stream data is maintained. The original floodway showed a relationship between the left and right floodway boundaries and the stream. Whenever possible, that relationship is maintained. At a minimum, the floodway contains the new stream. In addition, the floodway fringe areas (the portion of the 1% annual chance floodplain considered encroachable) have a direct relationship to the floodway boundary. This relationship is also maintained to whatever degree is reasonably possible. In other words, it is important that the relationship of the floodway to the entire floodplain is maintained as closely as possible. If necessary, the hydraulic model for the stream is consulted to ensure consistency and accuracy.

5.1.3.3. Identifying Possible Stream Channel Distance Discrepancies

The process of fitting unrevised floodplains to updated streams results in changes in stream channel distances from the unrevised hydraulic model to the new DFIRM. These changes are addressed in a note placed in the DFIRM legend on a case-by-case basis. The decision on which note to use is based on the number of occurrences of old flood hazard analyses being superimposed on new stream data. See Section 8.1.13. for an example of this note.

5.2. Base Flood Elevations

BFEs are shown as wavy lines perpendicular to the flow of the 1% annual chance flood. All BFEs are labeled with an elevation value that is located above, below, or at the end of the line (i.e., where it meets the 1% annual chance floodplain boundary). If the BFE value cannot be placed within 0.1 inch of the BFE line, a leader line is used to connect the BFE value to the BFE line.

The basic intent of plotting BFEs on a FIRM is to represent the flood profile to within 0.5 foot of elevation tolerance. If BFEs are plotted correctly, the FIRM can be used to recreate the flood profile within a 0.5-foot accuracy. The methods by which this is accomplished are shown below.

- BFEs are plotted at significant profile inflection points (profile breaks), or as close to them as possible. These points are critical to the accuracy of the map, because the profile could not be reproduced accurately without them. Criteria to determine the significance of a profile inflection point are addressed below.

- Intermediate BFEs are plotted between inflection points and required BFEs. Intermediate BFEs are placed at whole-foot elevations whenever possible. The main factor in determining the proper interval at which to plot intermediate BFEs is the profile slope (gradient). The general guidelines below are used, keeping in mind that the profile slope should be relatively constant between inflection points.

  Gentle Gradient – If BFEs rise less than 1 foot per 1 inch of map distance, the BFEs are plotted at every whole foot of elevation rise.

  Moderate Gradient – If BFEs rise more than 1 foot, but less than 5 feet per 1 inch of map distance, the BFEs are plotted at approximately 1-inch intervals.

  Steep Gradient – If BFEs rise 5 feet or more per 1 inch of map distance, the BFEs are plotted at 0.5-inch intervals of map distance or at 5-foot intervals, whichever is greater (i.e., whichever results in a wider BFE spacing).

- To determine the proper method for the intermediate BFE interval, the amount of BFE rise is divided by the map distance over which it rises. For example, 10 inches of map distance with a 30-foot BFE rise equals a 3-foot BFE rise per inch, and BFEs are plotted at 3-foot intervals.

- Once all BFEs have been plotted, the following test is performed to determine if all significant inflection points have been plotted:

  In the vicinity of inflection points, points are plotted on the profile (on whole foot elevations) where the BFEs are plotted on the map. If the BFE on the map represents a rounded BFE, the point plotted on the profile could be as much as 0.5-foot different from the 1% annual chance flood elevation. A straight line is drawn between adjacent plotted points. If there is more than 0.5-foot difference between the drawn line and the 1% annual chance flood elevation, an additional BFE or an adjustment to the plotted BFE is needed.

- BFEs must not rise more than 1 foot across panel edges (unless the stream gradient is very steep at the panel edge).

- The maximum rise between plotted BFEs is not to exceed 10 feet.

- Extreme BFEs at corporate limits and Limits of Detailed Study do not have to be shown if graphically impossible (e.g., when the elevation is 65.5 at the corporate limits, BFE 65 may be plotted within 0.5 inch of the corporate limits).

- In a static 1% annual chance flood zone (tidal or lacustrine flooding), elevation numbers under zone labels are used in lieu of BFE lines. For tidal flooding only, a zone break (or gutter) is placed at the point where the static zone becomes a rising elevation zone, and a BFE line of the same elevation as the static zone is placed immediately upstream of the gutter.

5.3. Bench Marks

To ensure that vertical control monuments published on the DFIRM meet a minimum quality standard, temporary monuments (Elevation Reference Marks [ERMs]) established by study contractors during the hydraulic analysis of a Flood Insurance Study or restudy are not shown on the DFIRM unless they meet specific qualifying criteria as indicated below.

All qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered in the National Spatial Reference System (NSRS) as First or Second Order Vertical and have a stability classification ranking of A, B, or C are shown on the DFIRM and identified by their NSRS Permanent Identifier (PID).

In addition, when local jurisdictions have established their own vertical monument network, these monuments may also be shown on the DFIRM with the appropriate designations. Local monuments are placed on the DFIRM only if

the community has requested that they be included, and if the monuments meet the aforementioned inclusion criteria.

Descriptions of bench marks are not placed on the DFIRM. Map users are provided with a phone number and an Internet Uniform Resource Locator (URL) that allows them to access the NSRS to obtain the most up-to-date information on all vertical control monuments shown on the DFIRM.

5.3.1. NSRS Criteria

Bench marks cataloged by the NGS and included in the NSRS vary widely in stability classification and level of precision relative to levels of confidence. The minimum criteria for inclusion of an NSRS bench mark on the DFIRM are that the monument be Second Order Vertical and Stability Classification C, or better. NGS Stability definitions are as follows:

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)
- Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)
- Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)
- Stability D: Monuments of questionable or unknown stability (e.g., concrete monument above frost line, or steel witness post)

5.3.2. Qualifying Criteria for New Bench Marks

Control monuments established by study contractors for the purpose of vertical control during the hydraulic analysis of a flood hazard study may be added to the DFIRM provided they have been classified by, and entered into, the NSRS as indicated above and meet the following criteria:

- They must be surveyed per NGS-58 guidelines for Secondary Base 5 centimeter monuments relative to existing NSRS monuments;
- They must have stability classifications of "C" or better.
- Global Positioning System (GPS) files and station descriptions were submitted to NGS for inclusion into the NSRS.

5.3.3. Temporary Monuments Not Meeting NSRS Criteria

Temporary monuments (ERMs) established by study contractors during the hydraulic analysis of a Flood Insurance Study or restudy that do not meet the qualifying criteria described above are not shown on the DFIRM. However, the DFIRM spatial database records the locations of the ERMs and the Technical Support Data Notebook (TSDN) records the ERM elevation and description information previously shown on the FIRM.

5.4. Cross Sections

Cross sections are shown on the DFIRM for all watercourses for which floodways are determined. Cross-section locations and designations must correspond exactly with those shown on the Flood Profiles and on the Floodway Data tables presented in the FIS report. The distances between cross sections and between cross sections and physical features shown on the DFIRM must agree with those shown on the profiles within a maximum tolerance of 5% of the distance measured on the DFIRM.

5.4.1. Cross Section Labeling

Cross sections for each stream are labeled alphabetically, beginning at the downstream limit of detailed study.

Cross section lines cross the entire floodplain (past the limits of the shaded Zone X whenever possible).

Cross sections are labeled on the map with a hexagon at each end of the cross-section line. If there is not enough space to add a hexagon on each end, one hexagon on either end is used.

If the cross-section line does not exit **either** side of the floodplain on the panel, the hexagon is placed in the middle of the cross-section line.

Cross section hexagons are oriented so that the letter can be clearly read and is not upside down. If necessary to achieve this, the cross-section line is trimmed or bent once it crosses the 0.2% annual chance boundary.

All graphic adjustments to cross sections remain separate from the modeled cross-section locations that are stored in the DFIRM GIS files.

5.5. Coastal Transects

For coastal flood hazard studies, FEMA requires an evaluation of the effects of waves accompanying the storm surge flood event, and a determination of those added effects on final BFEs and hazard zones. The wave analyses performed for

a study are referenced in the FIS report and mapped on the FIRM. Wave transects are located with careful consideration of physical and cultural characteristics of the land so that they will closely represent conditions in their locality. The wave transect analysis (input and output data) does not represent a specific line on the map so much as the average characteristics of that area. However, a transect line is delineated and labeled on the FIRM to help the user understand the physical location of the wave transect described in the FIS report. The transect delineation on the FIRM also helps users determine which wave transect analysis may influence or directly affect their property or community area. It should be noted that the wave effects mapped for any transect begin at the shoreline and end at the limits of 1% annual chance flooding even though the actual transect line on the FIRM extends further seaward and landward of the flood hazard areas.

5.5.1 Coastal Transect Labeling

Coastal transect lines are dashed and the number of the transect is placed in a circle on both sides of the dashed line. If both sides of the line cannot be labeled due to space limitations, one label is sufficient.

Transect numbering generally proceeds consecutively from north to south and/or west to east along a shoreline. New coastal transects that need to be inserted between existing transects are numbered with an alphanumeric sequence (i.e., transects 5A and 5B might be inserted between existing transects 5 and 6).

5.6. Limit of Detailed Study and Limit of Study

Limit of Detailed Study labels are placed at the beginning and at the end of the detailed study stream. A Limit of Detailed Study label is used only when the flood profile also indicates the terminus of detailed study. It is important to note that when the detailed study stops because of a stream confluence or when the stream exits the DFIRM, these situations are implied Limits of Detailed Study and are not labeled as such on the DFIRM. It is also important to note that the same rules apply to Flood Profiles.

Limit of Study labels are used whenever the study (approximate or detailed) ends abruptly and has no corresponding Flood Profile. This occurs most often with approximately studied streams, but can also occur on backwater arms of detailed studied streams.

5.7. Standard Map Notes for the Body of the DFIRM

The following notes may be added to the DFIRM as needed to clarify flood hazard areas or features.

5.7.1. LIMIT OF DETAILED STUDY

This note is used to indicate the terminus of a 1% annual chance floodplain of a stream that has been studied by detailed hydrologic and hydraulic methods. The stream name may also be added to this note for clarity.

5.7.2. LIMIT OF STUDY

This note is used to indicate the truncated terminus of a 1% annual chance floodplain of a stream or backwater area that has not been independently studied by detailed analyses (e.g., no flood profile is associated with this location).

5.7.3. LIMIT OF FLOODWAY

This note is used to indicate the terminus of the FEMA-designated area of non-encroachment (the detailed analysis will continue).

5.7.4. FLOODWAY IN THIS AREA
TOO NARROW TO SHOW TO SCALE;
REFER TO FLOODWAY DATA TABLE

This note is used to indicate that map scale limitations do not allow the visible accurate portrayal of the actual width of the floodway. The digital files may show the actual width of the floodway.

5.7.5. 1% ANNUAL CHANCE
FLOOD DISCHARGE
CONTAINED IN CHANNEL

1% ANNUAL CHANCE
FLOOD DISCHARGE
CONTAINED IN CULVERT

These notes are used to indicate where the 1% annual chance flood elevation does not overtop the channel banks or is completely contained within the culvert pipe. This area may be bordered by a 0.2% annual chance floodplain.

5.7.6.

0.2% ANNUAL CHANCE FLOOD
DISCHARGE
CONTAINED IN CHANNEL

0.2% ANNUAL CHANCE FLOOD
DISCHARGE
CONTAINED IN CULVERT

These notes are used to indicate where both the 1% and 0.2% annual chance flood discharges do not overtop the channel banks or are completely contained within the culvert pipe.

5.7.7.

FLOODWAY
CONTAINED IN CHANNEL

FLOODWAY
CONTAINED IN CULVERT

These notes are used to indicate where the floodway boundaries coincide with the banks of a channel or a culvert pipe that are symbolized as single line features instead of being shown to scale.

5.7.8.

THIS AREA PROTECTED FROM THE
1% ANNUAL CHANCE FLOOD BY
LEVEE, DIKE OR OTHER STRUCTURE
SUBJECT TO POSSIBLE OVERTOPPING
DURING LARGER FLOODS

This note is used to indicate that an area that has been shown as shaded Zone X on the landward side of the levee has an inherent flood risk in the event of a levee failure.

In situations where there is a substantial area of 0.2% annual chance floodplain that exists in combination with the area protected from the 1% annual chance flood, the note below may be used in lieu of this one.

5.7.9.

THIS AREA INCLUDES AREAS PROTECTED FROM THE
1% ANNUAL CHANCE FLOOD BY
LEVEE, DIKE, OR OTHER STRUCTURE
SUBJECT TO FAILURE OR OVERTOPPING
DURING LARGER FLOODS

This note is normally used in combination with a dashed line to identify and differentiate the 0.2% annual chance floodplain area from the area that is protected from the 1% annual chance flood.

5.7.10. COASTAL BASE FLOOD ELEVATIONS
APPLY ONLY LANDWARD OF
0.0 FEET (*NGVD / NAVD*)

This note is used to indicate where the wave height analysis is in effect. The note varies according to the vertical datum used. This note is placed on the map panel near the shoreline of the open body of water.

5.7.11. U.S. GOVERNMENT PROPERTY FEE BOUNDARY

FLOWAGE EASEMENT BOUNDARY

These or other similar notes are used to label the boundary of an area in which a community enforces more restrictive criteria for floodplain management than the minimum requirements of the NFIP.

5.7.12. PROFILE BASE LINE

This note is used to identify a line on the map panel that indicates the modeled flow path of a stream when it does not coincide with the hydrographic feature shown on the map. The profile base line is used to represent channel distances as indicated on the flood profiles and floodway data tables. It is shown as a single line with one dash and labeled "Profile Base Line." A profile base line may be added to detailed studied streams for the following reasons:

- When the hydraulic model reflects a more direct flow path than the channel configuration shown on the map. This is most often the case when the stream displays extensive meandering.
- There is an island that splits the river shoreline. The profile base line is used to identify the main channel.
- There is a lake through which a stream flows and the reservoir routing modeling method has been used to effect a continuous flood profile.
- The flood path is undefined on the map but the flow path has been modeled.

5.7.13. FLOOD HAZARD INFORMATION
IS NOT SHOWN ON THIS MAP
IN AREAS OUTSIDE OF *[community/county name]*

This note is used on DOQ-based DFIRM panels that are only partially covered by the studied jurisdiction. The note is added in areas outside the jurisdiction to clarify that flood hazards may exist outside the jurisdictional boundary but are not shown on this map.

5.7.14. FLOOD HAZARD INFORMATION IS SHOWN WITHIN THE (*COMMUNITY NAME*) FOR INFORMATION ONLY. FOR FLOOD INSURANCE, REFER TO SEPARATELY PRINTED FLOOD INSURANCE RATE MAP FOR THE (*COMMUNITY NAME*).

This note is retained on countywide map panels, if applicable, to indicate that the named community is not included in the countywide FIS or on the countywide DFIRM because portions of it are also located within one or more counties that currently are not in the countywide mapping format. This note should not be added to new countywide DFIRMs because it corresponds to a method of handling multi-county communities that is no longer used.

5.7.15. FLOOD INSURANCE INFORMATION ON THIS MAP APPLIES ONLY TO THE AREAS WITHIN THE CORPORATE LIMITS OF THE (*COMMUNITY NAME*). SPECIAL FLOOD HAZARD AREAS ARE SHOWN OUTSIDE OF THE (*COMMUNITY NAME*) FOR PLANNING PURPOSES ONLY.

This note is used when a standard format Flood Boundary Floodway Map (FBFM) panel that showed additional flood hazard information outside of the jurisdiction being studied is now being combined with the DFIRM in Map Initiatives format. The flood hazard information outside the studied jurisdiction may be kept on the map at FEMA's discretion.

5.7.16. ZONE D BOUNDARY
COINCIDENT WITH
CORPORATE LIMITS

COASTAL BARRIER RESOURCES SYSTEM
BOUNDARY COINCIDENT
WITH CORPORATE LIMITS

These notes are examples of ones that may be used to clarify coincident features. In general, the hierarchy of features is as follows: (1) political boundaries, (2) flood hazard areas, and (3) physical features such as shorelines. Roads that are coincident with other features generally do not need to be clarified by notes.

5.7.17. JOINS PANEL (*panel number*)

This note is used along each neatline of the map panel to indicate the number of the adjacent panel. The panel number includes only the 4-digit panel number and not the community number or the 5-digit FIPS code used for countywide DFIRMs. In cases where more than one panel joins the subject panel (as is the case where a smaller scale panel abuts two larger scale panels), more than one "Joins Panel" note is shown along a single neatline.

5.7.18. THIS AREA SHOWN AT A SCALE OF 1" = *(map scale)* ON MAP NUMBER *(map number)*

This note is used in the blank area of a breakout panel. The map number includes the 10-digit map number without the suffix. See section 9. for a discussion of map scales. Map layout, and DFIRM tiling.

5.8. Coastal Barrier Resources System Areas

In cooperation with the U.S. Department of the Interior, FEMA transfers Coastal Barrier Resources System (CBRS) boundaries to FIRMs using Congressionally adopted CBRS source maps. FIRMs clearly depict the different CBRS areas and their effective dates with special map notes and symbologies. It should be noted that although FEMA shows CBRS areas on FIRMs, the U.S. Congress is the only entity that may authorize a revision to CBRS boundaries.

This document uses the terms "Coastal Barriers" and "Coastal Barrier Resources System" units (or CBRS units). These terms are intended to be inclusive of all classifications of Coastal Barriers within the CBRS, including areas designated as Otherwise Protected Areas (OPAs). For additional information regarding the CBRS, see Section 8 of the *FMPCC Guidelines and Specifications.*

5.8.1 CBRS Classifications

There are two classifications of Coastal Barrier units as follows:

- **The 1982 and Later Coastal Barriers** were established by the Coastal Barrier Resources Act of 1982 and the Coastal Barrier Improvement Act of

1990. Other nonpublic land areas have been, and will likely continue to be, added to the CBRS by Congress subsequent to the 1990 Act. Under the 1982 Act, no new flood insurance coverage could be provided under this title on or after October 1, 1983, for any new construction or substantial improvements of structures located on any coastal barrier within the CBRS. The 1990 Act added new barrier units to the CBRS, modified existing barrier units, and established insurance prohibitions in designated OPAs.

- **1991 and Later Otherwise Protected Areas** are within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes. The 1990 Coastal Barrier Improvement Act established OPAs and subsequent legislation has, and will likely continue to, modify OPA boundaries.

5.8.2 CBRS Boundaries

The CBRS source maps show direct horizontal relationships between existing houses and the CBRS unit boundaries; these relationships must be maintained. Most often, the Coastal Barrier boundary has been delineated to keep existing homes out of the designated Coastal Barrier.

The CBRS source maps use thick lines to represent CBRS unit boundaries. Although standard cartographic practice is to follow the center of a boundary, if the boundary has a direct relationship with a linework feature (such as being against the edge of a road), that relationship must be maintained, even if it means the edge of the boundary line shown on the CBRS source map will be used.

Boundary lines must be shown to differentiate between contiguous barriers of different classifications, because each CBRS classification carries a different insurance prohibition. All barriers must be labeled/identified by notes that identify the CBRS classification of each area.

5.8.3 Map Screens for CBRS Areas

Although there are several different types of Coastal Barriers, only two unique map screens are shown on the DFIRM. Coastal Barriers are portrayed with the two map symbols shown below to differentiate between CBRS units and OPAs, which contain differing prohibitions. The CBRS and OPA prohibition dates (i.e., the date that the CBRS or OPA area was originally designated) are shown within each separate CBRS and OPA area to assist users in determining the proper insurance prohibition date for each unit.

CBRS Unit OPA Unit

The CBRS screens are not terminated at shorelines unless the shoreline is coincident with the CBRS or OPA boundary. The boundary is extended into the open water to the edge of the SFHA screen. The open-water extent of CBRS or OPA boundaries and cross-hatching on a DFIRM panel also does not extend beyond the SFHA screen unless the Coastal Barrier boundary is closed on the CBRS map.

5.8.4 Coastal Barrier Notes for the Body of the DFIRM

The CBRS and OPA notes are located, whenever possible, on or near the land area, and do not overprint existing base or floodplain features. If the note cannot be located on the land area because of space and clarity considerations, the note is placed in the open water within the CBRS or OPA screen, near the land area. If the note cannot be placed within the CBRS or OPA screen without creating overprints, the note is leadered to the land area.

5.8.4.1. FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER OCTOBER 1, 1983, IN DESIGNATED COASTAL BARRIERS.

This note identifies an area classified as a 1983 CBRS unit. An abbreviated note (see Section 5.8.4.4.) accompanied by a special Coastal Barrier Legend may also be used. See Section 8.2. for examples of the Coastal Barrier Legend.

5.8.4.2. FLOOD INSURANCE NOT AVAILABLE FOR NEW CONSTRUCTION OR SUBSTANTIALLY IMPROVED STRUCTURES ON OR AFTER (date), IN DESIGNATED COASTAL BARRIERS.

This note identifies an area classified as a 1990 or later CBRS unit. An abbreviated note (see Section 5.8.4.4.) accompanied by a special Coastal Barrier Legend may also be used. See Section 8.2. for examples of the Coastal Barrier Legend.

5.8.4.3. FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES - NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER (date) - NOT USED IN A MANNER CONSISTENT WITH THE PURPOSE OF THE OTHERWISE PROTECTED AREAS.

This note identifies an area classified as a 1991 or later Otherwise Protected Area. An abbreviated note (see Section 5.8.4.5.) accompanied by a special Coastal Barrier Legend may also be used. See Section 8.2. for examples of the Coastal Barrier Legend.

5.8.4.4. COASTAL BARRIER
IDENTIFIED date
(SEE COASTAL BARRIER LEGEND)

This is the abbreviated Coastal Barrier note for 1983 or 1990 or later Coastal Barriers. This note is used on all DFIRM panels containing CBRS areas for a community with three or more different classifications of CBRS areas. When this procedure is used, a special Coastal Barrier Legend is placed in the Notes to Users section of the DFIRM legend. This legend shows the entire CBRS map note for each classification of CBRS unit present on all of the DFIRM panels in the community or county. See Section 8.2. for examples of the Coastal Barrier Legend.

5.8.4.5. OTHERWISE PROTECTED AREA
IDENTIFIED date
(SEE COASTAL BARRIER LEGEND)

This is the abbreviated note for 1991or later Otherwise Protected Areas. This note is used on all DFIRM panels containing CBRS areas for a community with three or more different classifications of CBRS areas. When this procedure is used, a special Coastal Barrier Legend is placed in the Notes to Users section of the DFIRM legend. This legend shows the entire CBRS map note for each classification of OPA present on all of the DFIRM panels in the community or county. See Section 8.2. for examples of the Coastal Barrier Legend.

5.8.4.6. **Comments or concerns regarding Coastal Barrier Resources System areas and Otherwise Protected Areas should be directed to the Coastal Barrier Coordinator at the U.S. Fish and Wildlife Service; (_ _ _) _ _ _-_ _ _ _.**

The phone number is inserted into the above note as follows:

(413) 253-8657	CT, DE, MA, ME, MD, NJ, NY, RI, VA
(404) 679-7106	AL, FL, GA, LA, MS, NC, PR, SC, VI
(612) 713-5350	MI, MN, OH, WI
(505) 248-6454	TX

This note refers map users to the Fish and Wildlife Service's Regional Coastal Barrier Coordinator. It is placed in the body of the DFIRM panel close to the CBRS units. If the abbreviated Coastal Barrier notes and special Coastal Barrier Legend are used, this note appears below the Coastal Barrier Legend. See Section 8.2. for examples of the Coastal Barrier Legend.

5.8.4.7. THIS AREA IS CONTAINED WITHIN THE COASTAL BARRIER RESOURCES SYSTEM

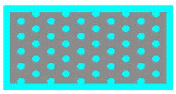
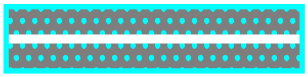
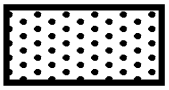
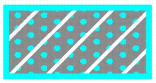
This note is used on DFIRM panels when the Coastal Barrier overlaps an area of floodway.

5.9. Graphic Representation of Flood Hazard Features

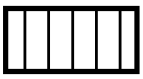
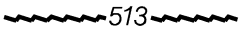
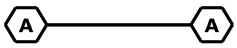
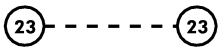
The following section provides examples of various flood hazard map features and their graphic portrayal on DFIRMs. Please note that there are two sets of examples, one for DFIRMs that are DOQ-based and one for those that are vector-based. The use of color to distinguish certain flood hazard features is included for use on DOQ-based DFIRMs. Bold type fonts surrounded by a white halo are used on DOQ-based DFIRMs. Medium type fonts are used on vector-based DFIRMs where the gray shading used for flood hazard areas allows them to show more clearly.

Note: All flood hazard features are shown on the DFIRM in black unless otherwise noted.

Flood Hazard Features Shown on DOQ Base

FEATURE	SPECIFICATION	EXAMPLE
FLOOD HAZARD FEATURES		
1% Annual Chance Flood Hazard Area (Zone A, AE, AO, AH, AR, A99, V, VE)	Area fill pattern Dots .020” diameter Spacing .030” Offset between rows .025” Color: Cyan	
1% Annual Chance Flood Hazard Boundary Line	Lineweight .020” Color: Cyan	
Boundary Dividing SFHAs of Different Elevations, Velocities, or Depths	Lineweight .020” Color: White	
0.2% Annual Chance Flood Hazard Area (Zone X)	Area fill pattern Dots .020” diameter Spacing .030” Offset between rows .025”	
0.2% Annual Chance Flood Hazard Boundary Line	Lineweight .020”	
Areas Outside 1% or 0.2% Annual Chance Flood Hazard Areas (Zone X, D)	No screen or tint	
Zone D Boundary	Lineweight .020” Dash .500”, space .050”	
Floodway Area	Area fill pattern Dots .020” diameter Spacing .030” Offset between rows .025” Color: Cyan Surprinted with diagonal hatching at 45° angle 10 lines per inch Lineweight .010” Color: White	
Floodway Boundary Line	Lineweight .020” Dash .375”, space .050” Color: Cyan	
State Encroachment Line	Lineweight .017” Circle diameter .060”	
State Encroachment Line Label	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	STATE ENCROACHMENT LINE
Flowage Easement Boundary	Lineweight .010”	
Flowage Easement Boundary Label	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	FLOWAGE EASEMENT BOUNDARY

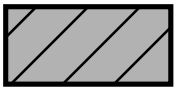
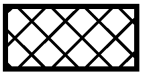
Flood Hazard Features Shown on DOQ Base

FEATURE	SPECIFICATION	EXAMPLE
Colorado River Floodway	Area fill pattern Diagonal cross-hatching at 45° and 135° angles 10 lines per inch Lineweight .010”	
Area of Special Consideration	Area fill pattern Vertical hatching at 90° angle 10 lines per inch Lineweight .006”	
Zone Designation	11 Pt. Univers Bold CAPS 11 Pt. Arial Bold CAPS	**ZONE AE**
Static Base Flood Elevation, Depth, or Velocity	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	(EL 10) (DEPTH 2') (VEL 15 FPS)
Base Flood Elevation Line	Lineweight .017”	
Base Flood Elevation Value	10 Pt. Univers Medium Italics 10 Pt. Arial Italics	*646*
Cross Section	Lineweight .017” Hexagon .200” across 10 Pt. Univers Bold CAPS 10 Pt. Arial Bold CAPS	
Coastal Transect	Lineweight .017” Dash .050”, space .010” Circle .200” diameter 10 Pt. Univers Bold CAPS 10 Pt. Arial Bold CAPS	
Limit of Study, Limit of Detailed Study, Limit of Floodway Line	Lineweight .004”	
Limit of Study, Limit of Detailed Study, Limit of Floodway Note	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	LIMIT OF STUDY LIMIT OF DETAILED STUDY LIMIT OF FLOODWAY
Profile Base Line	Lineweight .010 Dashing: 1” .05” .1” .05” 1”	
Profile Base Line Label	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	PROFILE BASE LINE
River Mile Marker	Dot Diameter .030” to .090” 10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	● M1.5
Bench Mark	Lineweight .017” Length .100” to .150” Angle 45° 10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	DX5510 X
Gaging Station	Circle Diameter .100”	
Special Notes	8 Pt. Univers Bold CAPS 8 Pt. Arial Bold CAPS	**1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL**

Flood Hazard Features Shown on DOQ Base

FEATURE	SPECIFICATION	EXAMPLE
"This Area Shown…." Note	24 Pt. Univers CAPS 24 Pt. Arial CAPS	THIS AREA SHOWN...
FIRM Panel Neatline	Lineweight .010"	
Joins Panel Numbers	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	JOINS PANEL 0125
Arrowhead Leader	Lineweight .010"	
Dot Leader	Lineweight .010" Dot .020"diameter	
COASTAL BARRIER FEATURES		
Coastal Barrier Resources System Area	Area fill pattern Diagonal hatching at 135° angle 8 to 10 lines per inch Lineweight .006" to .010"	
Otherwise Protected Area	Area fill pattern Broken diagonal hatching at 135° angle 8 to 10 lines per inch Lineweight .006" to 010" Dash .130" to .150" space .750" to .850"	
Coastal Barrier Boundary	Dotted line Diameter .0875" spacing .0335"	
CBRS and OPA Notes	10 Pt. Universe Medium CAPS 10 Pt. Arial CAPS	FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT…..
Coastal Barrier Coordinator Note	10 Pt. Universe Bold CLC 10 Pt. Arial Bold CLC	**Comments or concerns regarding Coastal Barrier Resources System areas ……**

Flood Hazard Features Shown on Vector Base

FEATURE	SPECIFICATION	EXAMPLE
FLOOD HAZARD FEATURES		
1% Annual Chance Flood Hazard Area (Zone A, AE, AO, AH, AR, A99, V, VE)	50% 133 lines per inch screen tint or equivalent area fill pattern	
1% Annual Chance Flood Hazard Boundary Line	Lineweight .015”	
Boundary Dividing SFHAs of Different Elevations, Velocities, or Depths	Lineweight .015” Color: White	
0.2% Annual Chance Flood Hazard Area (Zone X)	20% 133 lines per inch screen tint or equivalent area fill pattern	
0.2% Annual Chance Flood Hazard Boundary Line	Lineweight .015”	
Areas Outside 1% or 0.2% Annual Chance Flood Hazard Areas (Zone X, D)	No screen or tint	
Zone D Boundary	Lineweight .015” Dash .5”, space .05”	
Floodway Area	50% 133 lines per inch screen tint or equivalent area fill pattern Surprinted with diagonal hatching at 45° 10 lines per inch, Lineweight .004” to .010”	
Floodway Boundary Line	Lineweight .015” Dash .375”, space .050”	
State Encroachment Line	Lineweight .010” Circle diameter .060”	
State Encroachment Line Label	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	STATE ENCROACHMENT LINE
Flowage Easement Boundary	Lineweight .010” to .020”	
Flowage Easement Boundary Label	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	FLOWAGE EASEMENT BOUNDARY
Colorado River Floodway	Area fill pattern Diagonal cross-hatching at 45° and 135° angles 10 lines per inch, Lineweight .010”	
Area of Special Consideration	Area fill pattern Vertical hatching at 90° angle 10 lines per inch Lineweight .006”	

Flood Hazard Features Shown on Vector Base

FEATURE	SPECIFICATION	EXAMPLE
Zone Designation	11 Pt. Univers Bold CAPS 11 Pt. Arial Bold CAPS	**ZONE AE**
Static Base Flood Elevation, Depth, or Velocity	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	(EL 10) (DEPTH 2') (VEL 15 FPS)
Base Flood Elevation Line	Lineweight .010" to .030"	513
Base Flood Elevation Value	10 Pt. Univers Medium Italics 10 Pt. Arial Italics	*646*
Cross Section	Lineweight .010" Hexagon .2" 10 Pt. Univers Bold CAPS 10 Pt. Arial Bold CAPS	A — A
Coastal Transect	Lineweight .010" Dash .05", space .010" Circle .2" diameter 10 Pt. Univers Bold CAPS 10 Pt. Arial Bold CAPS	23 - - - - - 23
Limit of Study, Limit of Detailed Study, Limit of Floodway Line	Lineweight .004" to .006"	
Limit of Study, Limit of Detailed Study, Limit of Floodway Note	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	LIMIT OF STUDY LIMIT OF DETAILED STUDY LIMIT OF FLOODWAY
Profile Base Line	Lineweight .010 Dashing: 1" .05" .1" .05" 1"	
Profile Base Line Label	8 Pt. Univers Medium CAPS 8 Pt. Arial CAPS	PROFILE BASE LINE
River Mile Marker And Label	Dot Diameter .030" to .090" 10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	M1.5
Bench Mark	Lineweight .010" Length .100" to .150" Angle 45° 10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	DX5510
Gaging Station	Circle Diameter .100"	
Special Notes	8 Pt. Univers Bold CAPS 8 Pt. Arial Bold CAPS	**1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL**
"This Area Shown…." Note	24 Pt. Univers CAPS 24 Pt. Arial CAPS	THIS AREA SHOWN...
FIRM Panel Neatline	Lineweight .006"	
Joins Panel Numbers	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	JOINS PANEL 0125
Arrowhead Leader	Lineweight .006"	
Dot Leader	Lineweight .006" Dot .020"diameter	

Flood Hazard Features Shown on Vector Base

FEATURE		
COASTAL BARRIER FEATURES		
Coastal Barrier Resources System Area	Area fill pattern Diagonal hatching at 135° angle 8 to 10 lines per inch Lineweight .006” to .010”	
Otherwise Protected Area	Area fill pattern Broken diagonal hatching at 135° angle 8 to 10 lines per inch Lineweight .006” to 010” Dash .130” to .150” space .750” to .850”	
Coastal Barrier Boundary	Dotted line Diameter .0875” spacing .0335”	••••••••••••••••••
CBRS and OPA Notes	10 Pt. Universe Medium CAPS 10 Pt. Arial CAPS	FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT…..
Coastal Barrier Coordinator Note	10 Pt. Universe Bold CLC 10 Pt. Arial Bold CLC	**Comments or concerns regarding Coastal Barrier Resources System areas ……**

6. DFIRM TITLE BLOCK

6.1. DFIRM Title Block Elements

The DFIRM title block contains those items that identify the community and provide panel specific information, including the map number and effective date of the DFIRM. See Section 6.3. for examples of DFIRM title blocks.

6.1.1 Panel Number

PANEL 0125 D

The DFIRM panel number and suffix are referenced at the top of the DFIRM title block to assist in locating DFIRM panels for those users who store the maps upright in filing cabinets.

6.1.2 Community Name

The complete name of the community(s) included in the FIS and FIRM is shown in the DFIRM title block. This information includes the community type (e.g., city, town, village, etc.), community name, state, and a community descriptor. The community descriptor varies depending on the type of study. Several examples are shown below.

6.1.2.1.

TOWN OF
ADAMS,
PENNSYLVANIA
JEFFERSON COUNTY

For studies of single jurisdiction incorporated communities, the full community name, state, and county in which the community is located are included in the DFIRM title block.

6.1.2.2.

BOONE COUNTY,
ILLINOIS
(UNINCORPORATED AREAS)

For county studies prepared in non-countywide format, the county name, state, and "Unincorporated Areas" are included in the DFIRM title block.

6.1.2.3.

CITY OF
HAMPTON, VIRGINIA
INDEPENDENT CITY

Some cities are independent from any county. For independent cities, the full community name, state, and "Independent City" are included in the DFIRM title block.

6.1.2.4.

CARBON COUNTY, UTAH
AND INCORPORATED AREAS

For countywide studies that include both unincorporated areas of a county and incorporated communities, the county name, state, and "And Incorporated Areas" are included in the DFIRM title block.

6.1.2.5.

PIKE COUNTY,
PENNSYLVANIA
(ALL JURISDICTIONS)

In some states, the entire county is made up of incorporated jurisdictions and there are no unincorporated areas in the county. For countywide studies that are made up entirely of incorporated communities, the county name, state, and "(All Jurisdictions)" are included in the DFIRM title block.

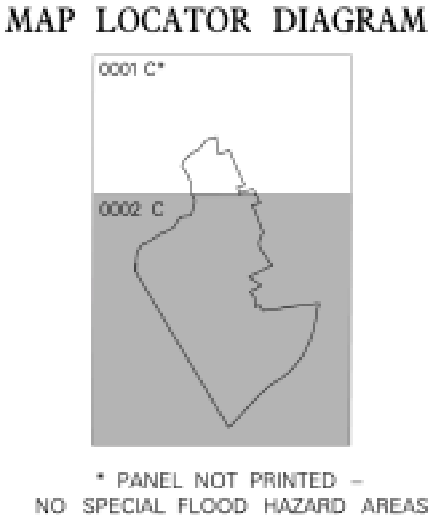
6.1.3 Panel Number

PANEL 25 OF 100
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

ONLY PANEL PRINTED

The DFIRM panel number and the highest DFIRM panel included in the study are referenced in the title block of multi-panel DFIRMs. The note below the panel number refers the map user to the index for an overview of the entire community. Only Panel Printed is used for communities that fall on a single map sheet.

6.1.4 Map Locator Diagram



Map Locator Diagrams serve the same function as a Map Index and are used when only one panel is printed and the entire community does not fit inside the panel neatlines (i.e., there are non-printed panels). The following guidelines are followed when preparing a Map Locator Diagram:

- The diagram is located in the title block, whenever possible.
- Because the Map Locator Diagram replaces the Map Index, the panels are numbered using 4-digit panel numbers (for example 0025) and include suffixes.
- The regular panel-not-printed notes are used to explain the non-printed panels.
- The panel that is being printed is screened.

6.1.5 Listing of Communities Shown on Panel

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FLOOD COUNTY	990099	0038	D
FLOODVILLE, TOWN OF	990098	0038	D

A listing of all communities shown on the panel, including each jurisdiction's CID, panel number, and panel suffix is shown in the title block of each DFIRM panel. For single jurisdiction studies, only one community is listed.

6.1.6 Notice to User

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

This note is placed on all DFIRM title blocks so that the map user can identify the use of the map number and community panel numbers.

6.1.7 Map Number

MAP NUMBER
4155900390 C

The Map Number used in the DFIRM title block is comprised of the following components:

- either the 5-digit county FIPS code followed by "C" or the 6-digit community identification number;
- the 4-digit panel number;
- a space; and
- the map suffix.

The map suffix is used to track published editions of each DFIRM panel. All panels within a study do not necessarily have the same map suffix if they were not all updated at the same time. When each new edition of a DFIRM is prepared, the suffix for each DFIRM panel that is being revised is changed to the next letter in alphabetical sequence, with the letter "I" being skipped.

6.1.8 Effective or Map Revised Date of DFIRM

EFFECTIVE DATE:

MAP REVISED:

The DFIRM title block shows the effective date of the map. This date may be designated in the title block as "Effective Date" (for the first version of the FIRM for the subject jurisdiction) or "Map Revised" (for a FIRM that has been revised at least once). When the preliminary copy of a DFIRM is prepared, this date is left blank. When the final copy of a DFIRM is prepared, the effective date or map revised date is added.

6.1.9 CBRS Notes

There must be a Coastal Barrier note located on the DFIRM title block of all new or revised CBRS panels. The note reads as follows:

-NOTE-
THIS MAP INCORPORATES APPROXIMATE BOUNDARIES OF COASTAL BARRIER RESOURCES SYSTEM UNITS AND/OR OTHERWISE PROTECTED AREAS ESTABLISHED UNDER THE COASTAL BARRIER IMPROVEMENT ACT OF 1990 (PL 101-591).

Subsequent to the passage of Public Law 101-591, there have been several changes to the CBRS. If the map panel contains a Coastal Barrier established under an act subsequent to Public Law 101-591, the note that is placed in the DFIRM title block is modified to include the subject public law. One such example is provided below:

-NOTE-
THIS MAP INCORPORATES APPROXIMATE BOUNDARIES OF COASTAL BARRIER RESOURCES SYSTEM UNITS AND/OR OTHERWISE PROTECTED AREAS ESTABLISHED UNDER THE COASTAL BARRIER IMPROVEMENT ACT OF 1990 (PL 101-591) AND/OR THE WILD EXOTIC BIRD CONSERVATION ACT OF 1992 (PL 102-440).

6.1.10 Future Conditions Note

INCLUDES FUTURE CONDITIONS
1% ANNUAL CHANCE FLOOD

This note is added to the title block of DFIRMs that depict 1% annual chance floodplains based on future conditions in addition to those based on existing conditions.

6.2 Graphic Representation of DFIRM Title Block Elements

The following section provides examples of various title block elements and their graphic portrayal on DFIRMs.

DFIRM Title Block Elements

FEATURE	SPECIFICATION	EXAMPLE
Title Box	Lineweight .010"	(See sample DFIRM title blocks shown in Section 6.3.)
FIRM	36 Pt. Univers Bold Condensed CAPS 36 Pt. Arial Narrow Bold CAPS	**FIRM**
Flood Insurance Rate Map	16 Pt. Univers Bold Condensed CAPS 16 Pt. Arial Narrow Bold CAPS	**FLOOD INSURANCE RATE MAP**
NFIP	40 Pt. Univers Bold Condensed CAPS Outline 40 Pt. Arial Narrow Bold CAPS Outline	NFIP
National Flood Insurance Program	36 Pt. Univers Bold Condensed CAPS Outline 36 Pt. Arial Narrow Bold CAPS Outline	NATIONAL FLOOD INSURANCE PROGRAM
Panel Number	12 - 14 Pt. Univers Bold CAPS 12 - 14 Pt. Arial Bold CAPS	**PANEL 0125 D**
Community Classification	14 Pt. Times Roman Bold CAPS 14 Pt. Times New Roman Bold CAPS	**TOWN OF**
Community or Study Name	18 Pt. Times Roman Bold CAPS 18 Pt. Times New Roman Bold CAPS	**PIKE COUNTY, PENNSYLVANIA**
Community Type, County Name, Community Descriptor	14 Pt. Times Roman Bold CAPS 14 Pt. Times New Roman Bold CAPS	**WASHINGTON COUNTY** **(UNINCORPORATED AREAS)**
Panel Number, Only Panel Printed	16 Pt. Univers Bold Condensed CAPS 16 Pt. Arial Narrow Bold CAPS	**PANEL 25 OF 100** **ONLY PANEL PRINTED**
See Map Index note	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
Map Locator Diagram	14 Pt. Cheltenham Bold Condensed CAPS 14 Pt. Times New Roman Bold CAPS	**MAP LOCATOR DIAGRAM**

DFIRM Title Block Elements

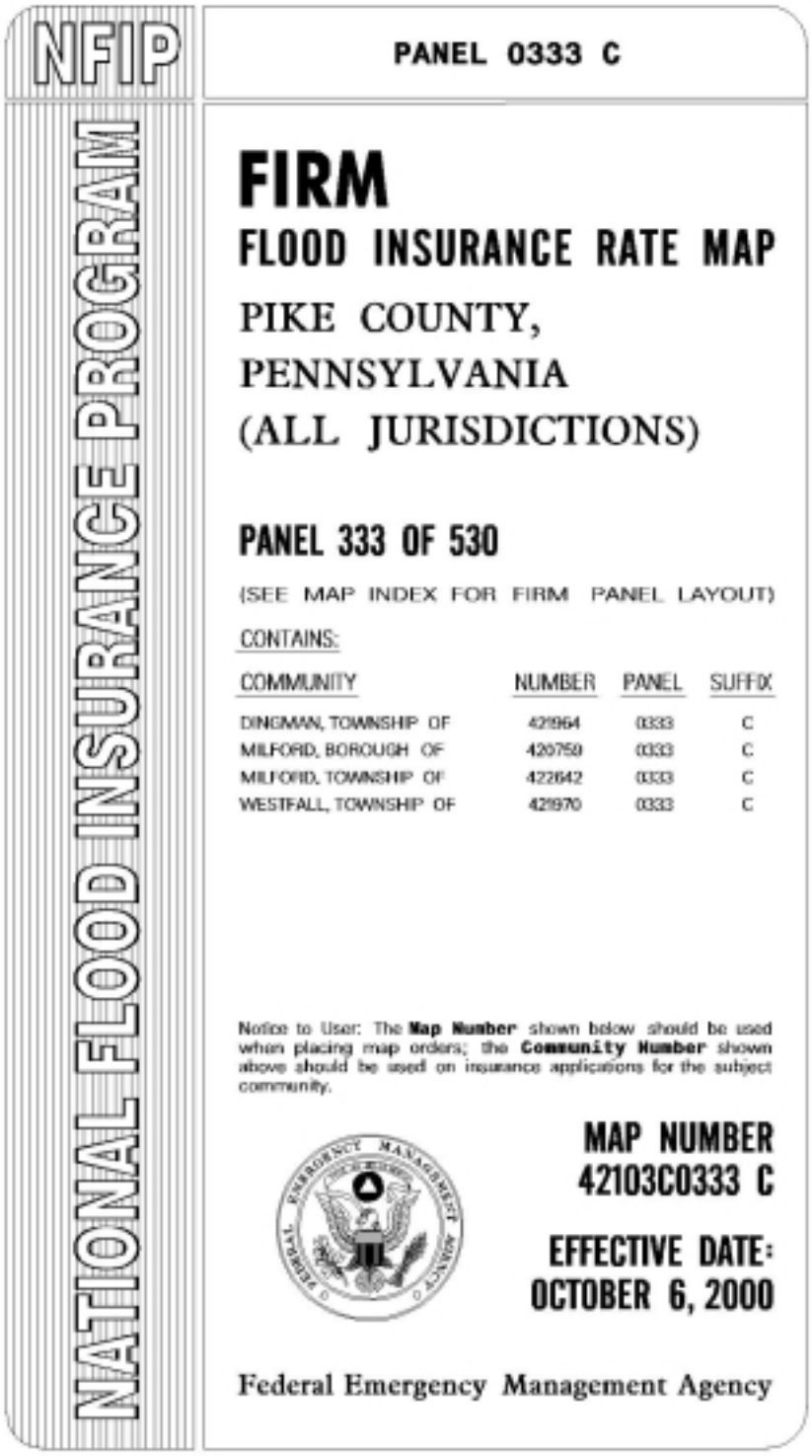
FEATURE	SPECIFICATION	EXAMPLE
Listing of Communities	7 - 10 Pt. Univers Medium CAPS 7 - 10 Pt. Arial CAPS	CONTAINS: COMMUNITY NUMBER PANEL SUFFIX
Community Name, Number, Panel, Suffix	6 - 8 Pt. Univers Medium CAPS 6 - 8 Pt. Arial CAPS	**MONROE COUNTY 125129 0025 D**
Coastal Barrier Resources System Note	10 Pt. Univers Medium CAPS Arial CAPS	-NOTE- THIS MAP INCORPORATES APPROXIMATE BOUNDARIES OF COASTAL BARRIER RESOURCES SYSTEM UNITS…….
Future Conditions Note	14 Pt. Univers Bold Condensed CAPS 14 Pt. Arial Narrow Bold CAPS	**INCUDES FUTURE CONDITIONS 1% ANNUAL CHANCE FLOOD**
Notice to User	10 Pt. Univers Medium CAPS and CLC 10 Pt. Arial CAPS and CLC	Notice to User: The MAP NUMBER shown below……..
Map Number	16 Pt. Univers Bold Condensed CAPS 16 Pt. Arial Narrow Bold CAPS	**MAP NUMBER 4155900390 C**
Effective Date / Map Revised Date	16 Pt. Univers Bold Condensed CAPS 16 Pt. Arial Narrow Bold CAPS	**EFFECTIVE DATE: JUNE 16, 1995**
FEMA Logo	Diameter 1.00”	
Federal Emergency Management Agency	12 Pt. Times Roman Bold CLC 12 Pt. Times New Roman Bold CLC	Federal Emergency Management Agency

6.3 Sample DFIRM Title Blocks

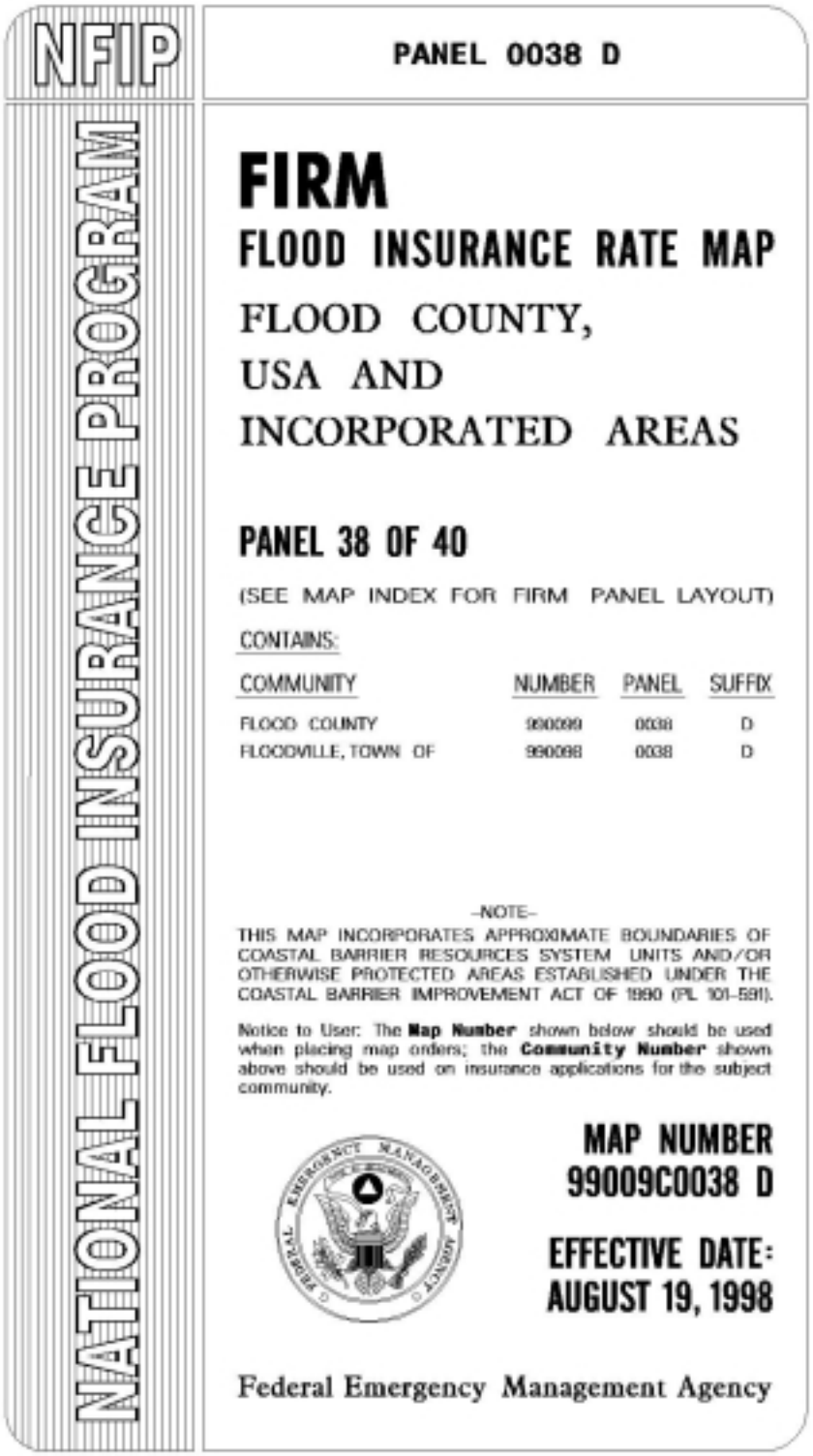
The following pages contain sample title blocks for the following different types of DFIRMs:

- Countywide
- Countywide with CBRS Areas
- Single Jurisdiction Multi-Panel
- Single Jurisdiction Only Panel Printed

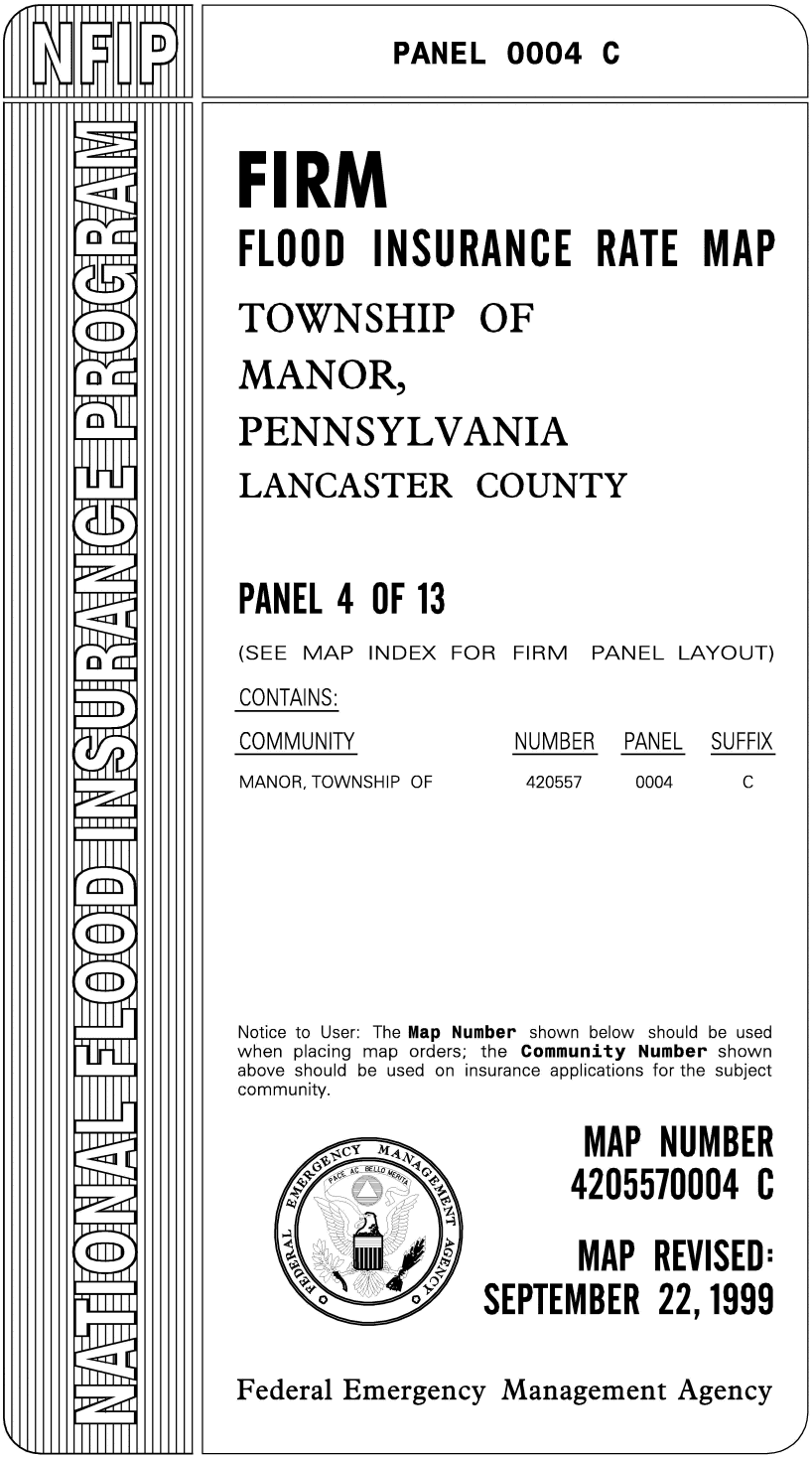
Countywide Title Block



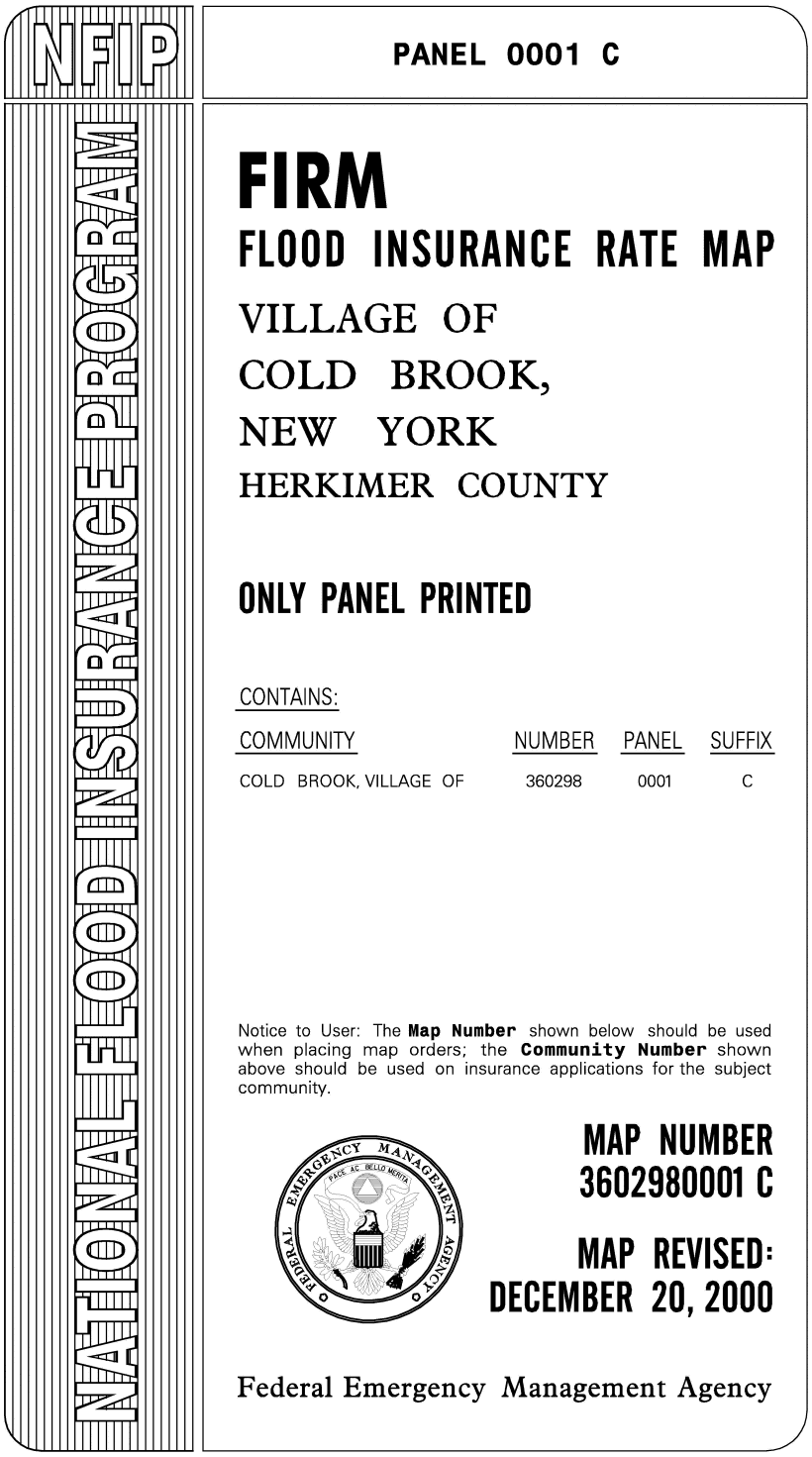
Countywide Title Block with Coastal Barrier Resources System Areas



Single Jurisdiction Multi-Panel



Single Jurisdiction Only Panel Printed



7. DFIRM LEGEND

7.1 DFIRM Legend Elements

The DFIRM legend contains those items that are needed to assist the map user in interpreting map symbols, flood hazard screens, linework, flood hazard zone information, and other data within the body of the map. Planimetric data (such as railroads and political boundaries) are not included in the DFIRM legend.

Most of the DFIRM legend elements are standardized and do not vary. However, the content of the DFIRM legend varies slightly based on the chosen base map, its coordinate system and horizontal datum, the vertical datum used for the study, community variables (e.g., map repository, previous FIRM editions0, whether CBRS areas are included on the map, and map scale. The following items are ones that may vary in the DFIRM legend. See also Section 7.3. for DFIRM legend examples.

7.1.1 Future Conditions Zone Description

On DFIRMs that depict 1% annual chance floodplains that are based on future conditions in addition to those based on existing conditions, a modified description of the Zone X area is used in the DFIRM Legend. The modified note is as follows, with the addition in italics.

> Areas of 0.2% annual chance flood; *areas of future conditions 1% annual chance flood;* areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

7.1.2 Floodplain Boundary Description

7.1.2.1. Floodplain boundary

This note is used on DFIRMs that use a vector base map. The floodplain boundary symbol is shown in black and applies to the 1% and 0.2% annual chance floodplain boundaries.

7.1.2.2. 1% annual chance floodplain boundary

This note is used on DFIRMs that use a DOQ base map. The 1% annual chance floodplain boundary symbol is shown in blue.

7.1.2.3. 0.2% annual chance floodplain boundary

This note is used on DFIRMs that use a DOQ base map. The 0.2% annual chance floodplain boundary symbol is shown in black.

7.1.2.4. Future conditions floodplain boundary

This note is used on DFIRMs that use a DOQ base map. The future conditions floodplain boundary replaces the 0.2% annual chance floodplain boundary. The future conditions floodplain boundary symbol is shown in black.

7.1.3 Vertical Datum Notes

All references to vertical datums used in the creation of the DFIRM must clearly state which datum was used. One or the other of the following two notes is used in the Map Legend to clarify to which vertical datum the BFEs are referenced.

7.1.3.1. *Referenced to the National Geodetic Vertical Datum of 1929

This note is used when the vertical datum used for the hydrologic and hydraulic analyses is the National Geodetic Vertical Datum of 1929.

7.1.3.2. *Referenced to the North American Vertical Datum of 1988

This note is used when the vertical datum used for the hydrologic and hydraulic analyses is the North American Vertical Datum of 1988.

7.1.4 Horizontal Reference Grid Notes

The following notes clarify the use of horizontal reference grids or grid ticks on the DFIRM.

7.1.4.1. Geographic coordinates referenced to the *North American Datum of 1927 (NAD 27) or North American Datum of 1983 (NAD 83)*

This note identifies the horizontal datum of the geographic (latitude and longitude) coordinates shown at the four corners of each map panel. The note references either the North American Datum of 1927 (NAD 27) or the North American Datum of 1983 (NAD 83), whichever is used for the digital data files.

7.1.4.2. *1000*-meter Universal Transverse Mercator grid values, zone *18*

This note identifies the projection of the primary horizontal reference grid shown on the DFIRM, its interval, and zone. The grid interval shown depends on the scale(s) of the map.

7.1.4.3. *5000*-foot grid ticks: *Pennsylvania* State Plane coordinate system, *north* zone (FIPSZONE *3701*), *Transverse Mercator*

This note identifies the projection of the secondary horizontal reference grid ticks, their interval, zone, and projection. The grid interval shown depends on the scale(s) of the map. This note references the State Plane zone (both spelled out and by FIPSZONE) if more than one zone is used in the state.

7.1.5 Bench Marks

DX5510 x Bench mark (see explanation in Notes to Users section of this FIRM panel.)

The DFIRM legend identification of the bench mark symbol and PID refers the user to the Notes to Users section of the border for more information. In situations where a local vertical monument network is shown on the DFIRM, an appropriate sample monument designator is included on the legend.

7.1.6 Map Repository Notes

The map repository is a community government's designated location for housing its FIRM.

7.1.6.1.

MAP REPOSITORY
Thomasville City Hall, 10 Salem Street, Thomasville, North Carolina 27360 (Maps available for reference only, not for distribution.)

This is the Map Repository note used for single jurisdiction or non-countywide DFIRMs. The complete address of the map repository is included in the legend. The disclaimer, as stated, follows the address.

7.1.6.2.

MAP REPOSITORIES
Refer to listing of Map Repositories on Map Index

This is the Map Repository note used for countywide maps. The map repository address for each community in the county is listed on the Map Index. See Sections 11.3.5. and 11.3.6. for examples of map repository listings used on the Map Index.

7.1.7 NFIP Map Dates

7.1.7.1.

INITIAL IDENTIFICATION
February 11, 1977

FLOOD HAZARD BOUNDARY MAP REVISIONS
None

FLOOD INSURANCE RATE MAP EFFECTIVE
July 3, 1985

FLOOD INSURANCE RATE MAP REVISIONS
December 20, 2000 – to add Base Flood Elevations, floodway, and Special Flood Hazard Areas; to change zone designations and Special Flood Hazard Areas; to update map format; and to reflect updated topographic information.

These headings and listings of NFIP map dates are used for single jurisdiction studies. See Section 7.1.8. for a description of map revision notes.

7.1.7.2.

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
June 28, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
August 23, 1999 – to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to modify Coastal Barrier Resources System units.

These headings and listings of NFIP map dates are used for countywide studies. See Section 7.1.8. for a description of map revision notes.

7.1.8 Map Revision Notes

Standard notes are used in the "Flood Insurance Rate Map Revisions" portion of the DFIRM legend to document the reasons for past and present DFIRM revisions. One or a combination of notes is used to explain why a panel is revised. Only one date is required when more than one note is used.

Note: The map revision notes that are used for each DFIRM revision are date specific and not panel specific. All actions occurring on a specific date are combined as one map revision note and used on all panels for that particular revision.

The following is a listing of the standard map revision notes accompanied by explanations for clarity.

7.1.8.1. (Date of revision) - to update corporate limits

This note is used any time a revised DFIRM shows a new corporate limit configuration. If an Area Not Included boundary is revised on the DFIRM for the unincorporated areas of a county, this note specifically references the community (i.e., to update Town of Atlantic Beach corporate limits).

7.1.8.2. (Date of revision) - to decrease Base Flood Elevations

This note is used any time existing BFEs have only been decreased.

7.1.8.3. (Date of revision) - to increase Base Flood Elevations

This note is used any time existing BFEs have only been increased.

7.1.8.4. (Date of revision) - to change Base Flood Elevations

This note is used when BFEs are both increasing and decreasing.

7.1.8.5. (Date of revision) - to add Base Flood Elevations

This note is used when BFEs are added to a new detailed A or V zone for an area previously unstudied or previously studied by approximate methods.

7.1.8.6. (Date of revision) - to add Special Flood Hazard Areas

This note is used when new detailed or approximate 1% annual chance flooding is added to an area previously unstudied.

7.1.8.7. (Date of revision) - to change Special Flood Hazard Areas

This note is used when the configuration of an existing SFHA is modified.

7.1.8.8. (Date of revision) - to delete Special Flood Hazard Areas

This note is used when an SFHA is entirely removed from the DFIRM.

7.1.8.9. (Date of revision) - to change zone designations

This note is used when X (0.2% annual chance) zones are changed to X (no flooding) zones, or vice versa; when A zones are changed to X (0.2% annual chance) zones; and when A or V zones are changed to detailed zones (AE or VE zones).

7.1.8.10. (Date of revision) - to update map format

This note is used when an 11" x 17" FIRM is remapped into a z-fold, when a FIRM and FBFM are combined into a DFIRM (Map Initiatives), or when the digital format is used for the first time.

7.1.8.11. (Date of revision) - to add roads and road names

This note is used when new roads and road names are added to the DFIRM. "Update" instead of "add" is used when roads are moved or deleted, or when the names of roads change.

7.1.8.12. (Date of revision) - to include the effects of wave action

This note is used when a coastal wave height analysis has been added for the first time to an existing "non-wave height" FIS. Please note that revision notes 2 through 9 are not necessary when this note is used to describe changes to the DFIRM resulting from the addition of a wave height analysis.

7.1.8.13. (Date of revision) - to update the effects of wave action

This note is used when a coastal wave analysis has been revised.

7.1.8.14. (Date of revision) - to incorporate Primary Frontal Dune analysis

This note is used when an FIS is revised to reflect the inland limit of the Primary Frontal Dune.

7.1.8.15. (Date of revision) - to reflect revised shoreline

This note is used when all or part of the shoreline on a coastal DFIRM has been revised.

7.1.8.16. (Date of revision) - to reflect the effects of coastal erosion

This note is used when coastal erosion has been taken into account in the analysis.

7.1.8.17. (Date of revision) - to add Special Flood Hazard Areas previously shown on (community name), (state) Flood Insurance Rate Map dated (date), (year)

This note is used when a DFIRM revision incorporates the annexation of an area with special flood hazards that was previously shown on another community's FIRM.

7.1.8.18. (Date of revision) - to reflect updated topographic information

This note is used when the DFIRM revision is based, at least in part, on new topographic information.

7.1.8.19. (Date of revision) - to incorporate previously issued Letters of Map Revision

This note is used when determinations made by Letter of Map Revision (LOMR) are physically added to the revised DFIRM.

7.1.8.20. (Date of revision) - to incorporate previously issued Letters of Map Amendment

This note is used when determinations made by Letter of Map Amendment (LOMA) are physically added to the revised DFIRM.

7.1.8.21. (Date of revision) - to change floodway

This note is used when a floodway delineation change is the basis of the revision. This note is used only on Map Initiatives format DFIRMs.

7.1.8.22. (Date of revision) - to advance suffix

This note is used when the only change to the DFIRM is to change the map number suffix. This note is used only with the approval of a FEMA Project Officer.

7.1.9 Coastal Barrier Resources System Map Revision Notes

The following is a listing of the map revision notes pertaining to modifications to the Coastal Barrier Resources System.

The Coastal Barrier revision notes matrix below provides guidance on the revision note to be used in the DFIRM legend. The note used depends on whether CBRS areas and/or OPAs are being added to or removed from the community. Only one of the notes shown is used for any given community, so it must reflect the community as a whole. These revision notes are not panel-specific. They must reflect the action taken for the entire jurisdiction.

Coastal Barrier Revision Notes Matrix

Revision Note	Barrier Added	Barrier Removed[1]	OPA Added	OPA Removed[1]
To add Coastal Barrier Resources Areas	✓			
To remove Coastal Barrier Resources Areas		✓		
To modify Coastal Barrier Resources Areas	✓	✓		
To add Otherwise Protected Areas			✓	
To remove Otherwise Protected Areas				✓
To modify Otherwise Protected Areas			✓	✓
To add Coastal Barrier Resources Areas and Otherwise Protected Areas	✓		✓	
To add Coastal Barrier Resources Areas and to remove Otherwise Protected Areas	✓			✓
To add Coastal Barrier Resources Areas and to modify Otherwise Protected Areas	✓		✓	✓
To remove Coastal Barrier Resources Areas and to add Otherwise Protected Areas		✓	✓	
To remove Coastal Barrier Resources Areas and Otherwise Protected Areas		✓		✓
To remove Coastal Barrier Resources Areas and to modify Otherwise Protected Areas		✓	✓	✓
To modify Coastal Barrier Resources Areas and to add Otherwise Protected Areas	✓	✓	✓	
To modify Coastal Barrier Resources Areas and to remove Otherwise Protected Areas	✓	✓		✓
To modify Coastal Barrier Resources Areas and Otherwise Protected Areas	✓	✓	✓	✓

[1]This refers to any area, regardless of size, that has had the CBRS unit or OPA reduced in size in any area.

7.1.10 Other General DFIRM Legend Notes

7.1.10.1. For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

This note is shown only on countywide DFIRMs.

7.1.10.2. Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

This note is shown only on single jurisdiction DFIRMs that are being published for the first time (i.e., DFIRMs that show an effective date in the title block, not a map revised date).

7.1.10.3. To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

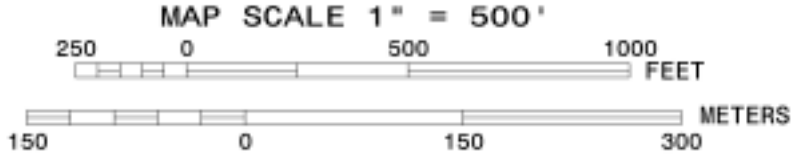
This note is shown on all DFIRMs.

7.1.11 North Arrow and Map Scale

7.1.11.1.

All DFIRMs are oriented so that north points to the top of the map sheet and to true north.

7.1.11.2.



The DFIRM scale bar includes references to both feet and meters and emulates the scale bar used by USGS on topographic quadrangles.

7.2 Graphic Representation of DFIRM Legend Elements

The following section provides examples of various legend elements and their graphic portrayal on DFIRMs.

DFIRM Legend Elements

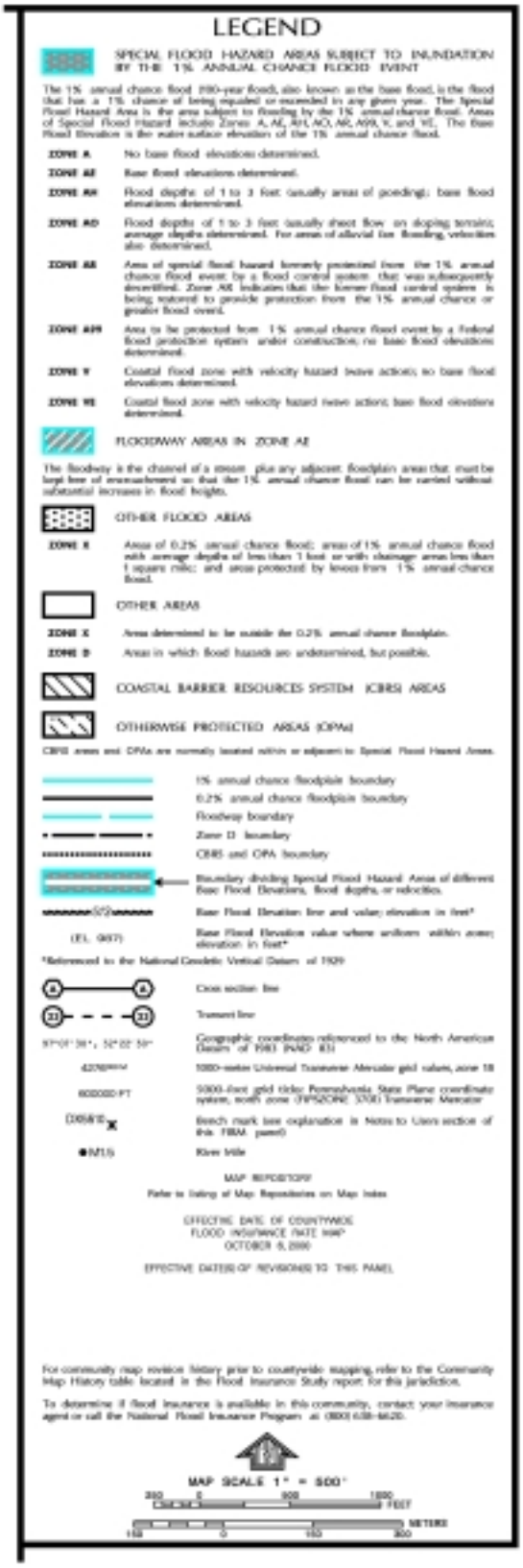
FEATURE	SPECIFICATION	EXAMPLE
Legend Title	18 Pt. Theme Bold CAPS 18 Pt. Univers Bold CAPS 18 Pt. Arial Bold CAPS	**LEGEND**
Flood Hazard Area Descriptions	12 Pt. Theme Medium CAPS 12 Pt. Univers Medium CAPS 12 Pt. Arial CAPS	SPECIAL FLOOD HAZARD AREAS SUBJECT TO….
Zone Examples	10 - 11 Pt. Univers Bold CAPS 10 - 11 Pt. Arial Bold CAPS	**ZONE AE**
Zone and Other Map Feature Descriptions	8 - 10 Pt. Univers Medium CLC 8 - 10 Pt. Arial CLC	Base flood elevations determined
Map Repository Address or Note	10 Pt. Univers Medium CAPS and CLC 10 Pt. Arial CAPS and CLC	MAP REPOSITORY Refer to listing of Map Repositories on Map Index
Date Headings	10 Pt. Univers Medium CAPS 10 Pt. Arial CAPS	EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
Dates and Revision Notes	8 - 10 Pt. Univers Medium CLC 8 - 10 Pt. Arial CLC	June 23, 1988 – to update corporate limits
Map Date Reference Note	8 - 10 Pt. Univers Medium CLC 8 - 10 Pt. Arial CLC	For community map revision history prior to countywide mapping……
Flood Insurance Availability Note	8 - 10 Pt. Univers Medium CLC 8 - 10 Pt. Arial CLC	To determine if flood insurance is available in this community …...
North Arrow	Lineweight .010” Width .700” Height .400”	
Approximate Scale	10 Pt. Univers Bold CAPS 10 Pt. Arial Bold CAPS	**MAP SCALE: 1” = 500”**
Scale Bar Values	8 - 10 Pt. Univers Medium CAPS 8 - 10 Pt. Arial CAPS	250 0 250 500 1000 FEET
Scale Bar (Feet)	Lineweight .010” Width 2.5”	(See example in Section 7.1.11.2.)
Scale Bar (Meters)	Lineweight .010” Width 3.0”	(See example in Section 7.1.11.2.)

7.3 Sample DFIRM Legends

The following pages contain sample map legends for the following different types of DFIRMs:

- Countywide, DOQ Base Map
- Countywide, Vector Base Map
- Single Jurisdiction, Vector Base Map, Effective Date
- Single Jurisdiction, Vector Base Map, Map Revised

Countywide, DOQ Base Map Legend



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A — No base flood elevations determined.

ZONE AE — Base flood elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL. 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

A — A — Cross section line

23 — 23 — Transect line

97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4276000mN — 1000-meter Universal Transverse Mercator grid values, zone 18

600000 FT — 5000-foot grid ticks: Pennsylvania State Plane coordinate system, south zone (FIPSZONE 3702) Transverse Mercator

DX5510 X — Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 — River Mile

MAP REPOSITORY

Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
OCTOBER 6, 2000

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

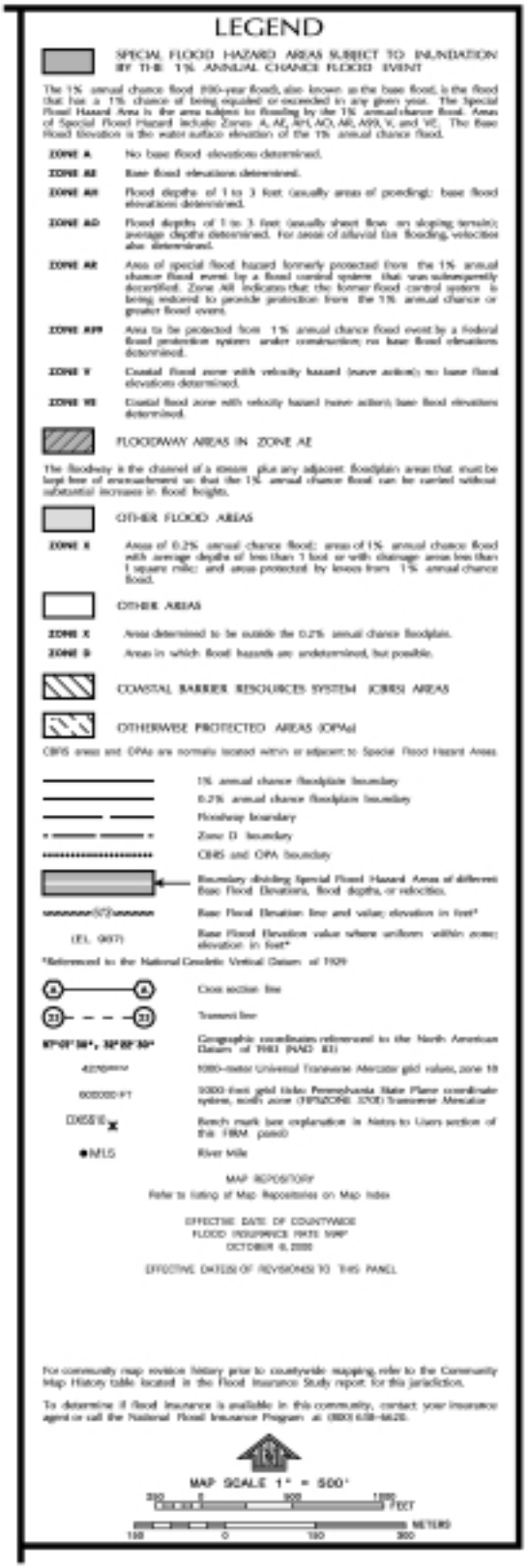
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

500 0 500 1000 FEET

150 0 150 300 METERS

Countywide, Vector Base Map Legend



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A — No base flood elevations determined.

ZONE AE — Base flood elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL. 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

A — A — Cross section line

23 — 23 — Transect line

97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4275000mN — 1000-meter Universal Transverse Mercator grid values, zone 18

600000 FT — 5000-foot grid ticks: Pennsylvania State Plane coordinate system, south zone (FIPSZONE 3702) Transverse Mercator

DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)

MFLS — River Mile

MAP REPOSITORY

Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

OCTOBER 6, 2000

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

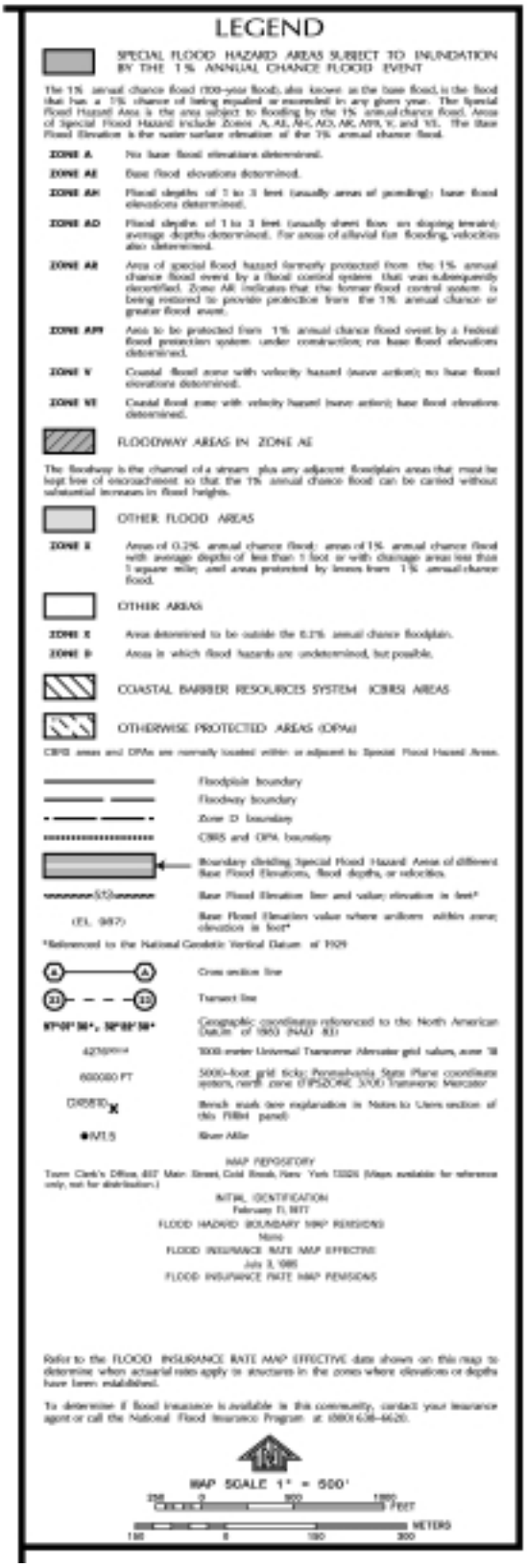
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

Single Jurisdiction, Vector Base Map, Effective Date Legend



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A — No base flood elevations determined.

ZONE AE — Base flood elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL. 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

A — A — Cross section line

23 — 23 — Transect line

97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4276000 m — 1000-meter Universal Transverse Mercator grid values, zone 18

600000 FT — 5000-foot grid ticks: Pennsylvania State Plane coordinate system, north zone (FIPSZONE 3200 Transverse Mercator

DX5510 X — Bench mark (see explanation in Notes to Users section of this FIRM panel)

MT.5 — River Mile

MAP REPOSITORY

Town Clerk's Office, 407 Main Street, Cold Brook, New York 13324 (Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION
February 11, 1977

FLOOD HAZARD BOUNDARY MAP REVISIONS
None

FLOOD INSURANCE RATE MAP EFFECTIVE
July 3, 1985

FLOOD INSURANCE RATE MAP REVISIONS

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

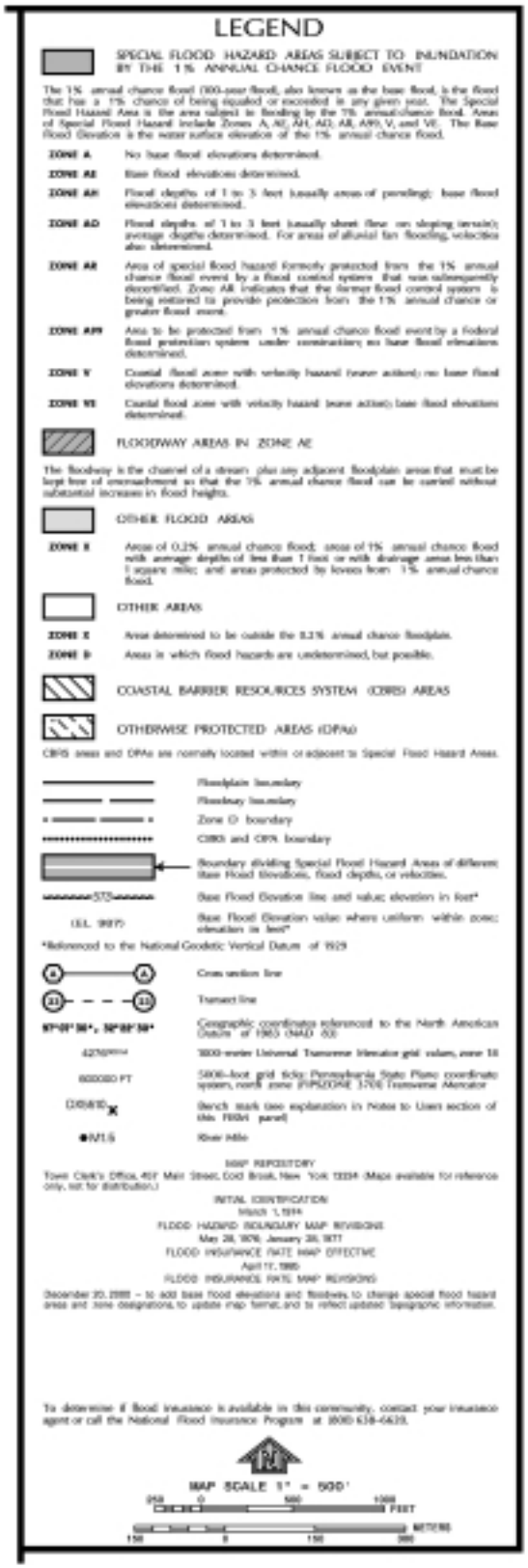
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

Single Jurisdiction, Vector Base Map, Map Revised Legend



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A — No base flood elevations determined.

ZONE AE — Base flood elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL. 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

A — A — Cross section line

23 — 23 — Transect line

97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4276000m — 1000-meter Universal Transverse Mercator grid values, zone 18

6000000 FT — 5000-foot grid ticks: Pennsylvania State Plane coordinate system, north zone (FIPSZONE 3702) Transverse Mercator

DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 — River Mile

MAP REPOSITORY

Town Clerk's Office, 401 Main Street, East Brook, New York 13534 (Maps available for reference only, not for distribution)

INITIAL IDENTIFICATION

March 1, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS

May 28, 1976; January 20, 1977

FLOOD INSURANCE RATE MAP EFFECTIVE

April 17, 1985

FLOOD INSURANCE RATE MAP REVISIONS

December 20, 2000 – to add base flood elevations and floodway, to change special flood hazard areas and zone designations, to update map format, and to reflect updated topographic information.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 500 1000 FEET

0 150 300 METERS